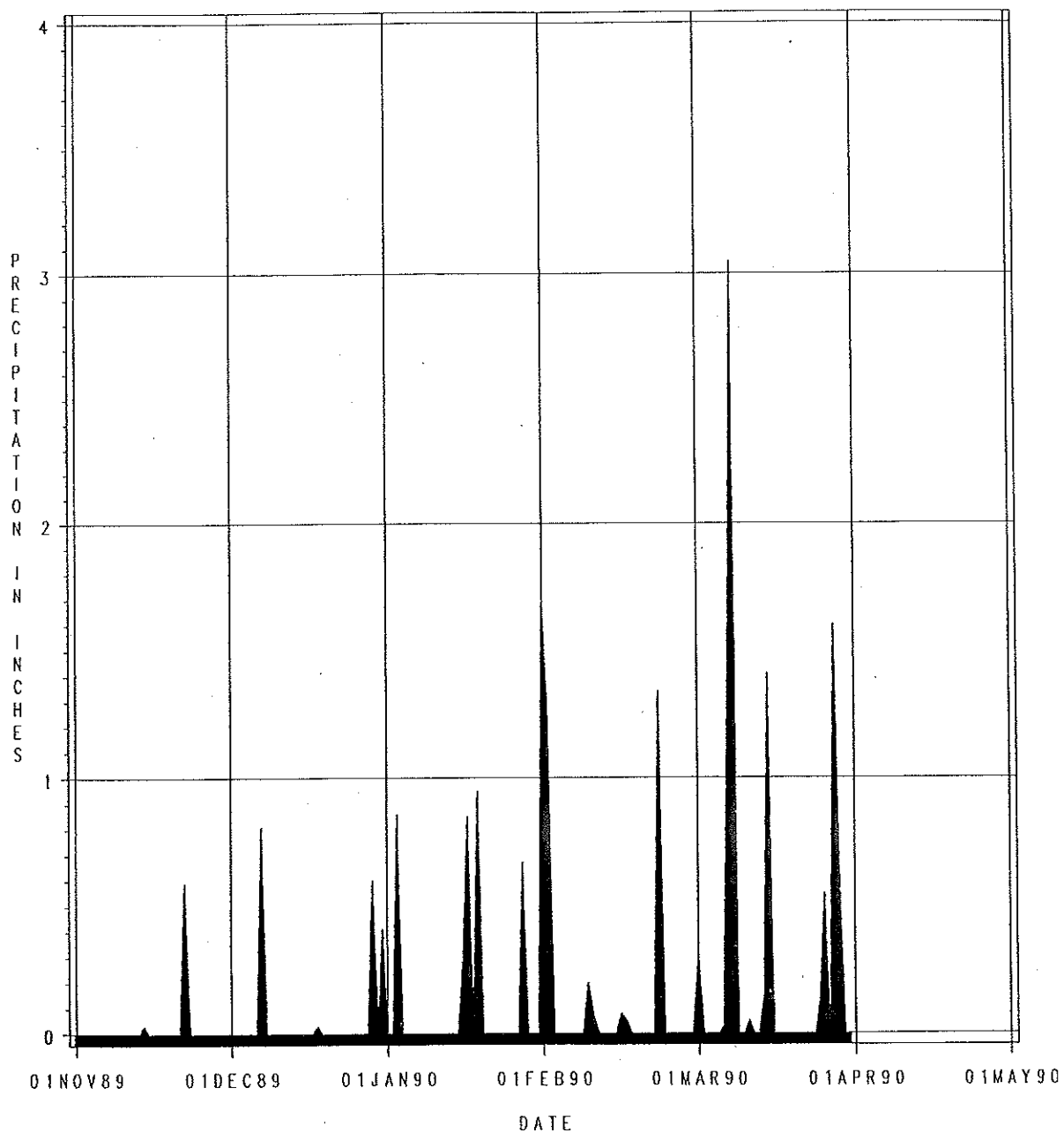
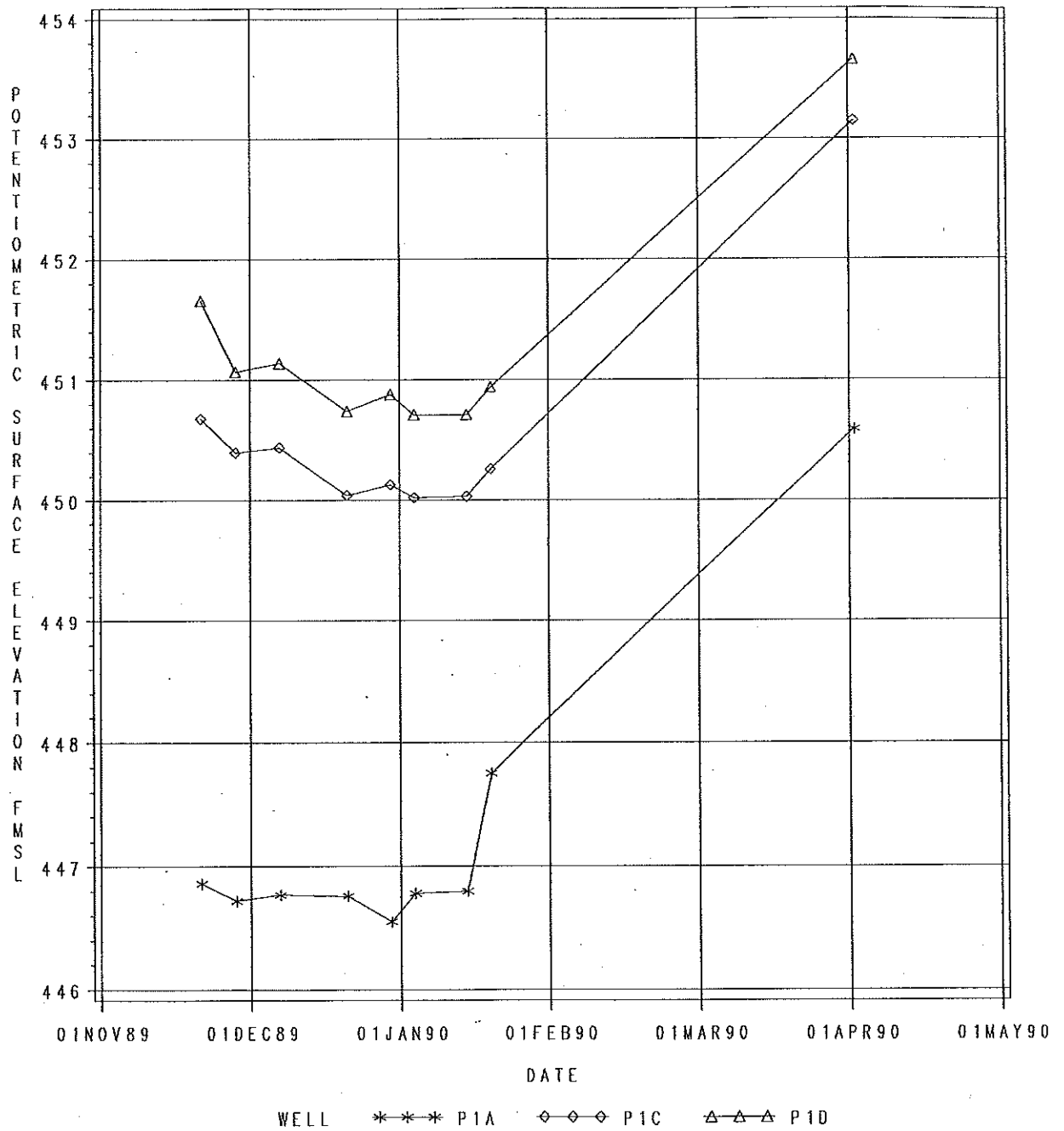


**APPENDIX C**  
**WELL HYDROGRAPHS**

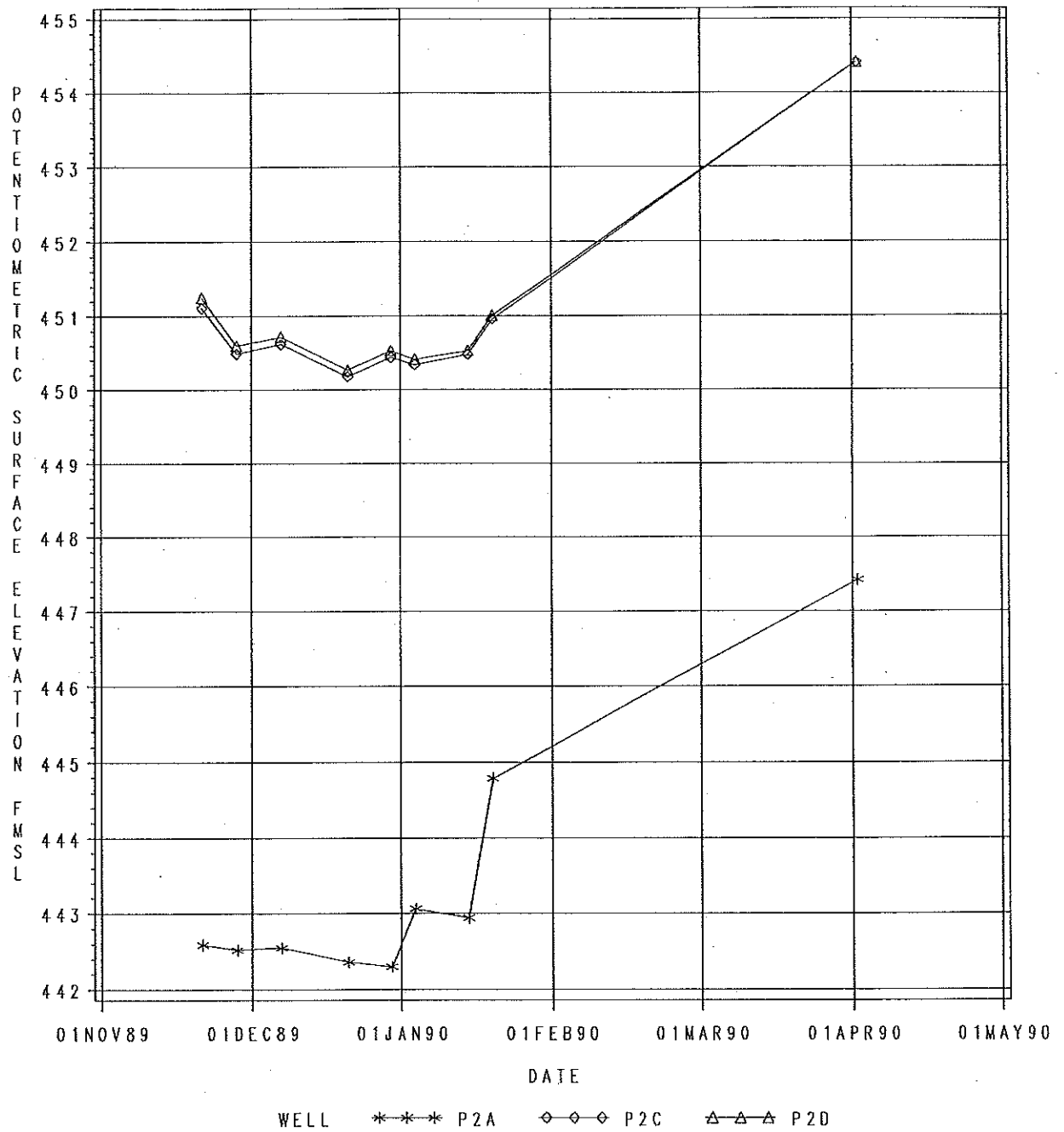
THOMASON LUMBER COMPANY  
PRECIPITATION EVENTS - BROKEN BOW 1 N, BROKEN BOW, OK  
NOVEMBER, 1989 - MARCH, 1990



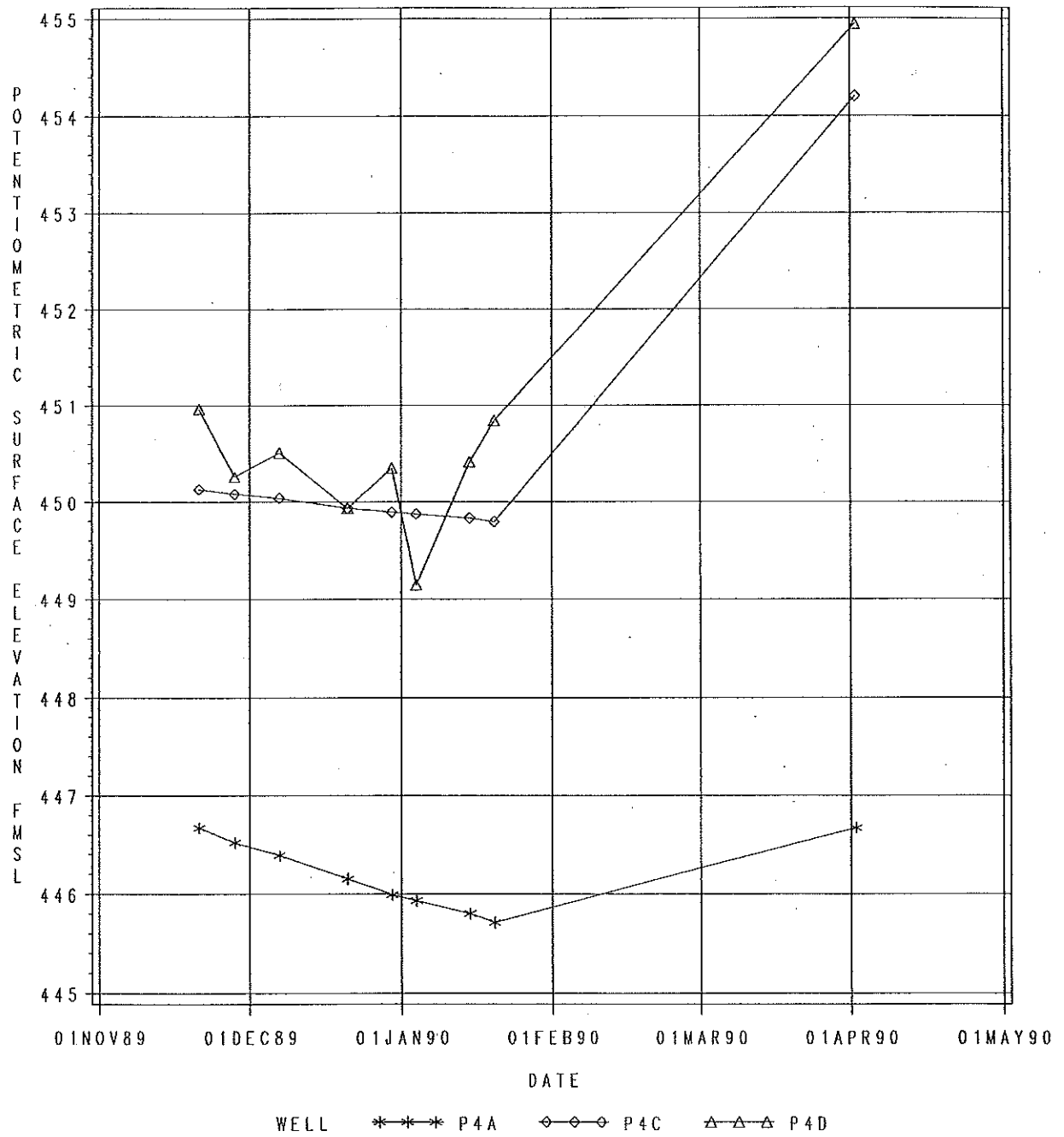
THOMASON LUMBER COMPANY  
P1 HYDROGRAPH



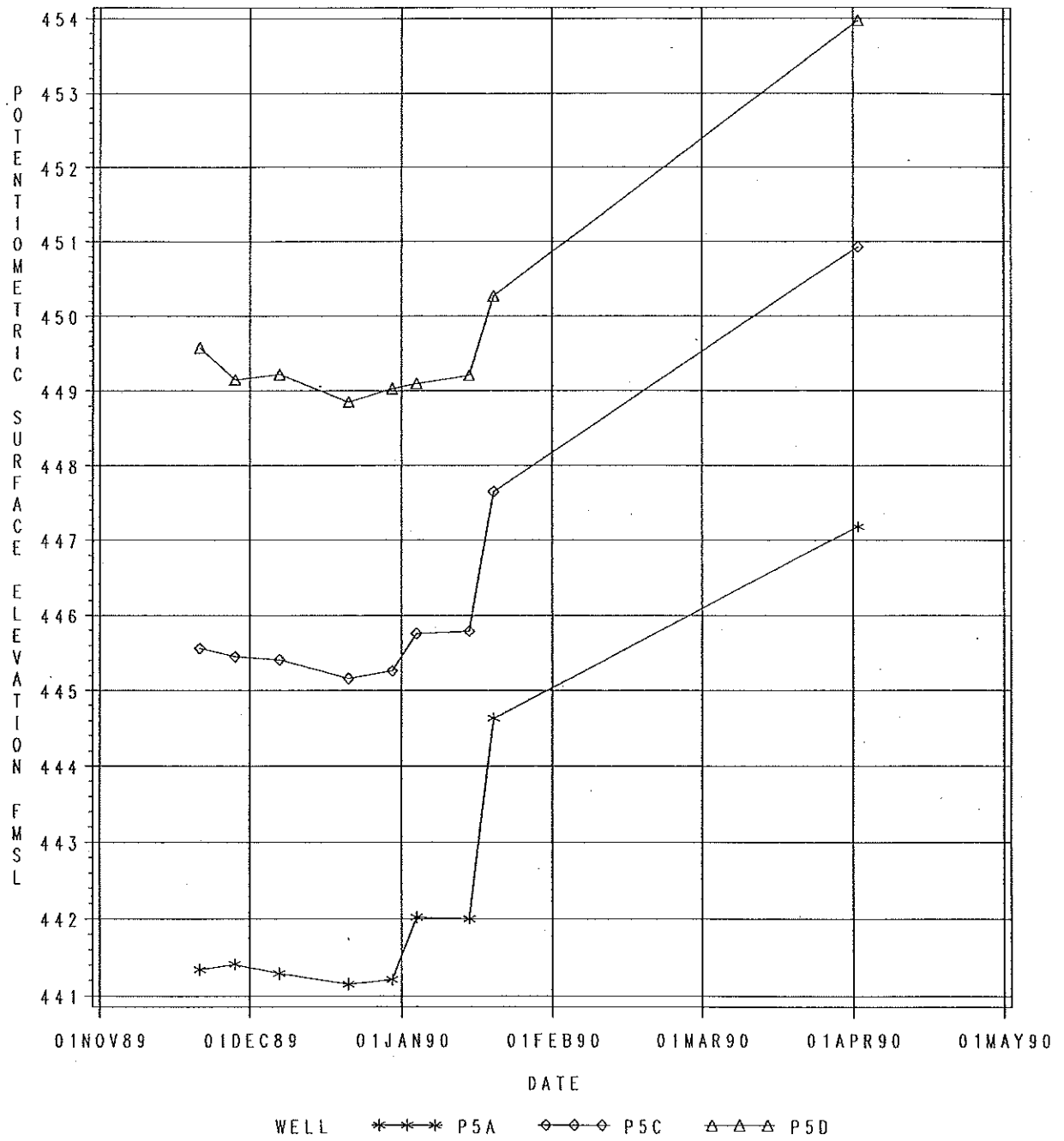
THOMASON LUMBER COMPANY  
P2 HYDROGRAPH



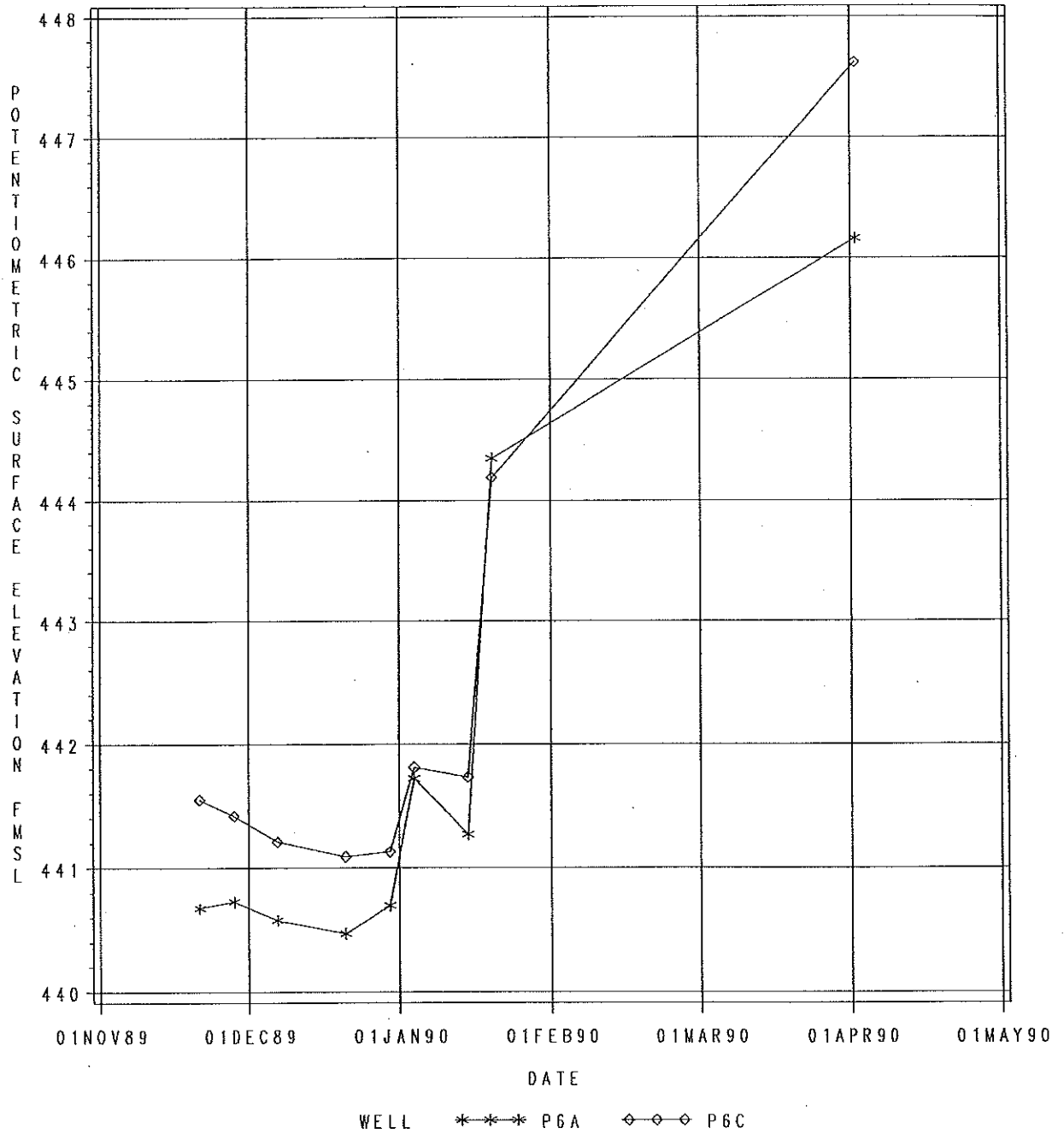
THOMASON LUMBER COMPANY  
P4 HYDROGRAPH



THOMASON LUMBER COMPANY  
P5 HYDROGRAPH



THOMASON LUMBER COMPANY  
P6 HYDROGRAPH

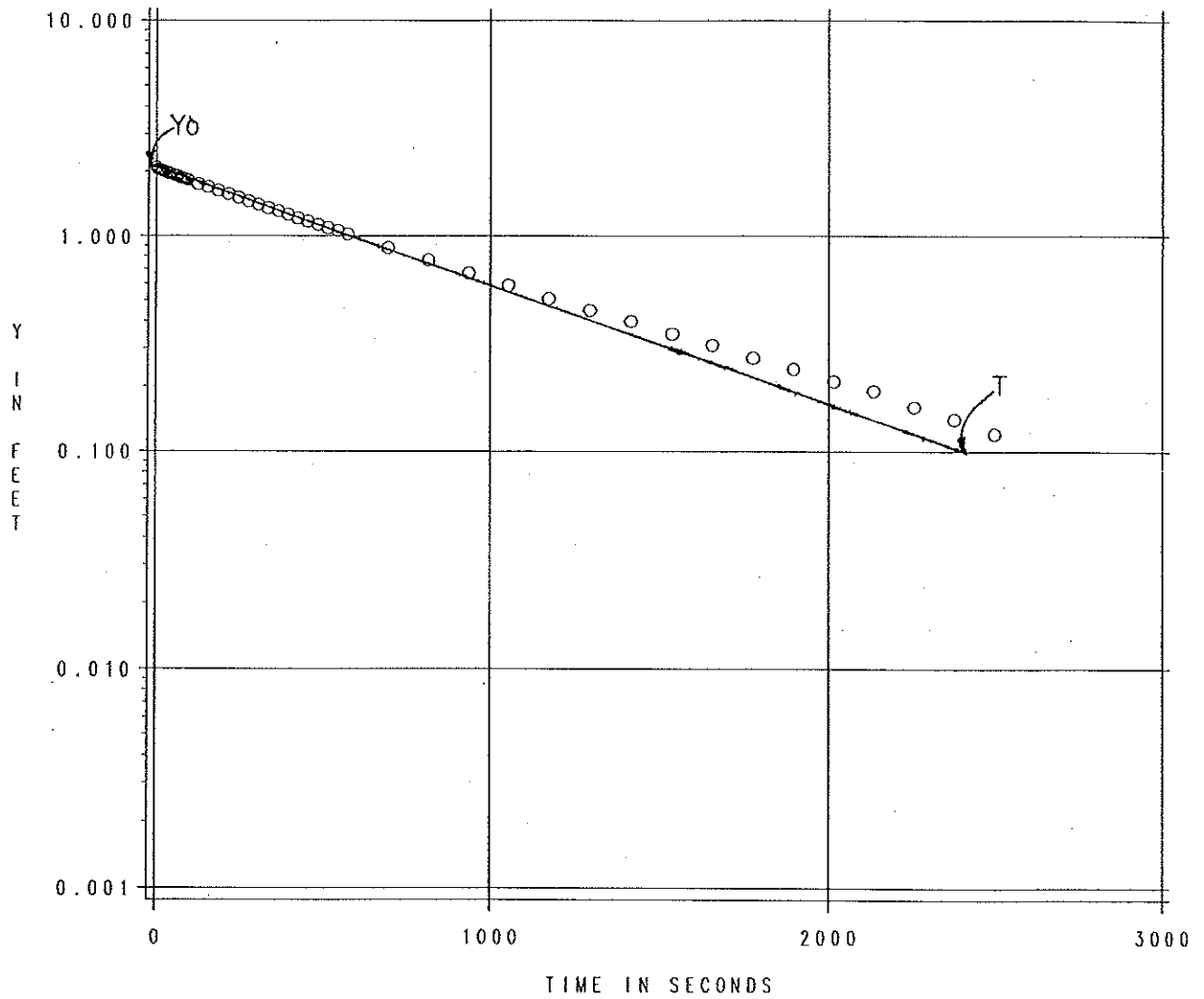


**APPENDIX D**  
**SLUG TEST CURVES**



# SLUG TEST DATA: P2AB

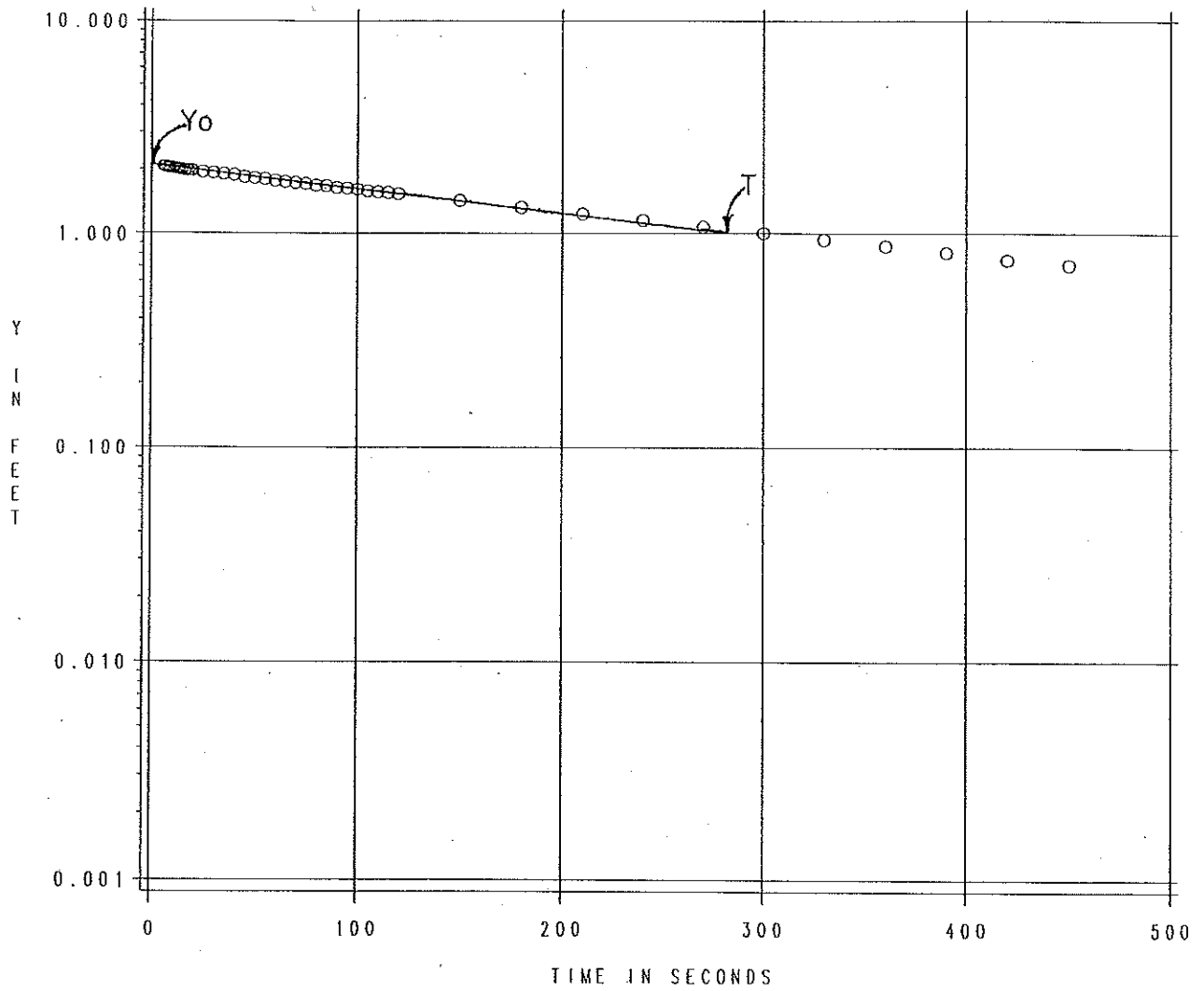
## BOUWER AND RICE METHOD



### PARAMETERS:

Y <sub>0</sub>	2.09
T	2410
Ln(R <sub>e</sub> /R <sub>w</sub> )	3.04
L	4.00
R <sub>c</sub>	0.167
R <sub>w</sub>	0.333
C	1.3
K (ft/sec)	1.34E-5

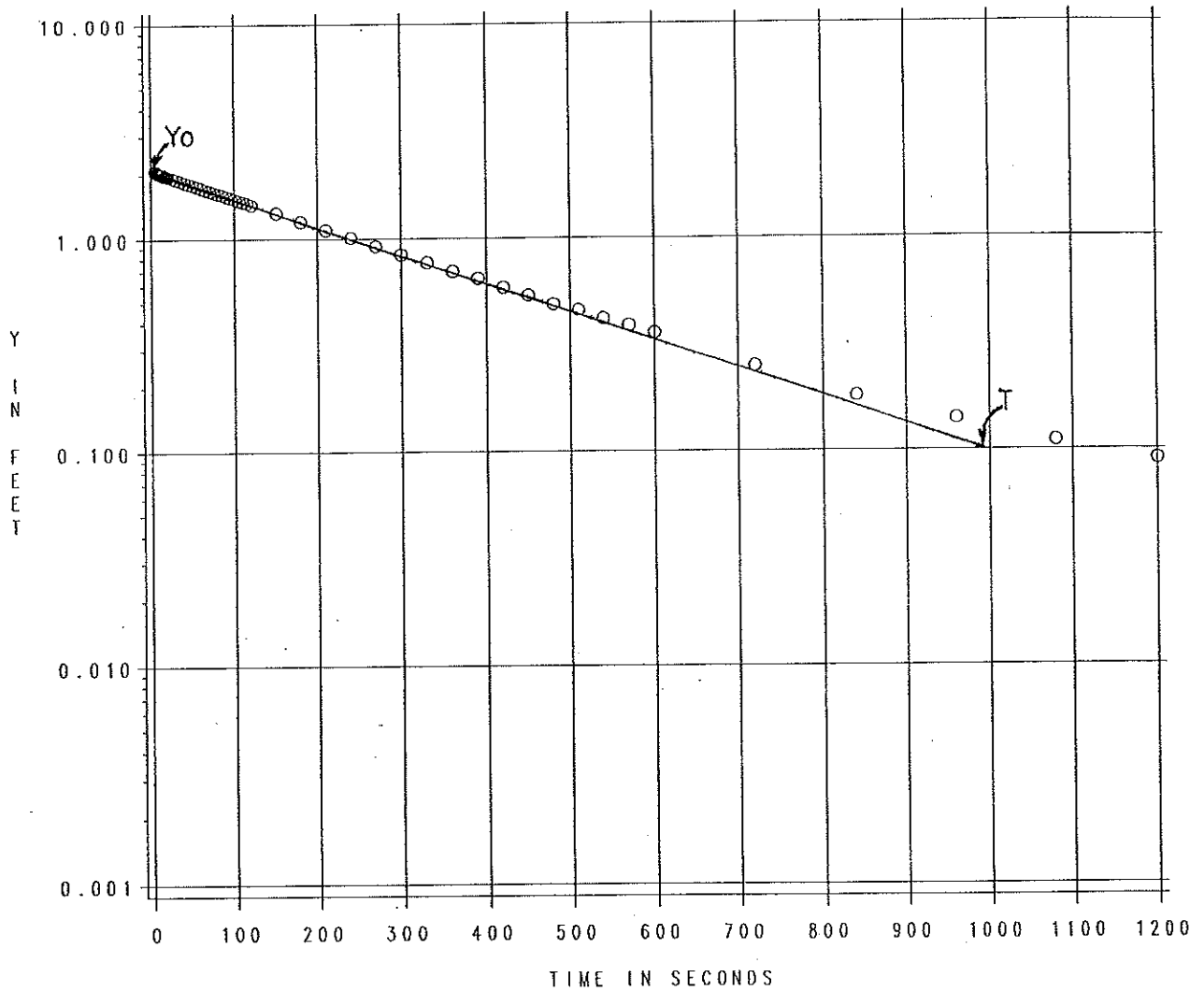
# SLUG TEST DATA: P2CB BOUWER AND RICE METHOD



## PARAMETERS:

Yo 2.07  
 T 283  
 Ln(R<sub>e</sub>/R<sub>w</sub>) 1.81  
 L 4.00  
 R<sub>c</sub> 0.167  
 A 2  
 B 0.3  
 K (ft/sec) 1.62E-5

# SLUG TEST DATA: P2DD BOUWER AND RICE METHOD



## PARAMETERS:

$Y_0$  2.08  
 $T$  993  
 $\ln(R_e/R_w)$  1.65  
 $L$  4.00  
 $R_c$  0.167  
 $A$  2  
 $B$  0.3  
 $K$  (ft/sec)  $1.75E-5$

## CALCULATIONS

For slug test P2AB,

$$\ln(R_e/r_w) = 1 / [(1.1 / (\ln(48.41/0.333))) + (1.3 / (4.0/0.333))] \\ = 3.04$$

$$K = (0.167^2 * 3.04) / (2 * 4.0) * (1/2410) * \ln(2.09/0.1) = 1.34E-5 \text{ ft/sec} \\ \text{or } K = 4.07E-4 \text{ cm/sec}$$

For slug test P2CB,

$$\ln(R_e/r_w) = 1 / [(1.1 / (\ln(19.65/0.333))) + ((2 + 0.3 * \ln((54.00 - 19.65)/0.333)) / (4.0/0.333))] = 1.81$$

$$K = (0.167^2 * 1.81) / (2 * 4.0) * (1/283) * \ln(2.07/1.0) = 1.62E-5 \text{ ft/sec} \\ \text{or } K = 4.95E-4 \text{ cm/sec.}$$

For slug test P2DD,

$$\ln(R_e/r_w) = 1 / [(1.1 / (\ln(10.40/0.333))) + ((2 + 0.3 * \ln((54.00 - 10.40)/0.333)) / (4.0/0.333))] = 1.65$$

$$K = (0.167^2 * 1.65) / (2 * 4.0) * (1/993) * \ln(2.08/0.1) = 1.75E-5 \text{ ft/sec} \\ \text{or } K = 5.34E-4 \text{ cm/sec.}$$

**APPENDIX E**  
**GROUND-WATER ANALYSES**



AMERICAN INTERPLEX  
CORPORATION  
LABORATORIES

APR 18 1990

8600 Kanis Road  
Little Rock, Arkansas 72204  
(501) 224-5060

Thomason Lumber and Timber Company (C-537)  
Post Office Drawer 278  
Broken Bow, OK 74738

April 17, 1990

ATTN: Mr. Earl Hayes

Control No. 25614

Description of Sample: Eleven (11) water samples collected by B & F Engineering personnel and received on 4/4/90

Results:

Sample Identification	PCP mg/l	Acenaphthylene mg/l	Fluoranthene mg/l	Napthalene mg/l
900403-1A, 4/3/90, 1430	<0.001	<0.01	<0.01	<0.01
900403-1A-1, 4/3/90, 1430	<0.001	<0.01	<0.01	<0.01
900403-2A, 4/3/90, 1500	<0.001	<0.01	<0.01	<0.01
900403-2C, 4/3/90, 1520	0.0042	<0.01	<0.01	<0.01
900403-2D, 4/3/90, 1540	<0.001	<0.01	<0.01	<0.01
900403-2D-1, 4/3/90, 1540	<0.001	<0.01	<0.01	<0.01
900403-4A, 4/3/90, 1610	<0.001	<0.01	<0.01	<0.01
900403-4C, 4/3/90, 1630	0.0034	<0.01	<0.01	<0.01
900403-6A, 4/3/90, 1700	<0.001	<0.01	<0.01	<0.01
900403-6C, 4/3/90, 1710	0.13	<0.01	<0.01	<0.01
900403-5A, 4/3/90, 1645	<0.001	<0.01	<0.01	<0.01

Method: EPA 8040, 8100

Remarks: Chain of custody enclosed.

cc: Mr. Peter Bayley  
B & F Engineering, Inc.

LM/bp

AMERICAN INTERPLEX CORPORATION

By Lydia Morton SL  
Lydia Morton  
Laboratory Director



AMERICAN INTERPLEX  
CORPORATION  
LABORATORIES

APR 24 1990

8600 Kanis Road  
Little Rock, Arkansas 72204  
(501) 224-5060

Thomason Lumber & Timber Company (C-537)  
Post Office Drawer 278  
Broken Bow, OK 74738

April 23, 1990

ATTN: Mr. Earl Hayes

Control No. 25628

Description of Sample: Ten (10) water samples collected by B & F Engineering  
received on 4/5/90.

Results:

<u>Sample Identification</u>	<u>PCP</u> <u>mg/l</u>	<u>Acenaphthylene</u> <u>mg/l</u>	<u>Fluoranthene</u> <u>mg/l</u>	<u>Napthalene</u> <u>mg/l</u>
900403-6C-1, 4/3/90, 1720	<0.001	<0.01	<0.01	<0.01
900403-9C-2, 4/3/90, 1725	<0.001	<0.01	<0.01	<0.01
900403-6C-3, 4/3/90, 1727	<0.001	<0.01	<0.01	<0.01
900403-6C-4, 4/3/90, 1730	<0.001	<0.01	<0.01	<0.01
900404-1C, 4/4/90, 1140	<0.001	<0.01	<0.01	<0.01
900404-1D, 4/4/90, 1120	<0.001	<0.01	<0.01	<0.01
900404-4D, 4/4/90, 1050	<0.001	<0.01	<0.01	<0.01
900404-5C, 4/4/90, 1000	<0.001	<0.01	<0.01	<0.01
900404-5D, 4/4/90, 1020	<0.001	<0.01	<0.01	<0.01
900404-FH, 4/4/90, 1130	<0.001	<0.01	<0.01	<0.01

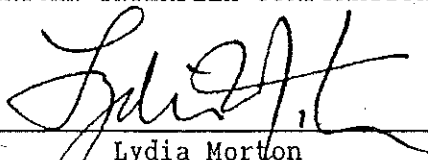
Method: EPA 8040, 8100

Remarks: Chain of custody enclosed.

cc: Mr. Peter Bayley  
B & F Engineering, Inc.

LM/lb

AMERICAN INTERPLEX CORPORATION

By   
Lydia Morton  
Laboratory Director

**APPENDIX F**  
**QUALITY ASSURANCE FORMS**



COPY

928 AIRPORT ROAD  
HOT SPRINGS, AR 71913  
(501) 767-2366

**B&F** ENGINEERING, INC.

CHAIN OF CUSTODY RECORD

PROJECT NO.		PROJECT NAME		PARAMETERS									
7-2397-0101		Thomason Lumber & Timber Company		LABORATORY									
SAMPLERS: (Signature) <i>Bill Harris</i>		American Interplex		STATION LOCATION									
FIELD SAMPLE NUMBER	DATE	TIME	COMP	GRAB	NO. OF CONTAINERS	PCR	Acenaphthylene	Fluoranthene	Napthalene				
900403-1A	4-3-90	1430		X	1	✓	✓	✓	✓				
900403-1A-1	4-3	1430		X	1	✓	✓	✓	✓				
900403-2A	4-3	1500		X	1	✓	✓	✓	✓				
900403-2C	4-3	1520		X	1	✓	✓	✓	✓				
900403-2D	4-3	1540		X	1	✓	✓	✓	✓				
900403-2D-1	4-3	1540		X	1	✓	✓	✓	✓				
900403-4A	4-3	1610		X	1	✓	✓	✓	✓				
900403-4C	4-3	1630		X	1	✓	✓	✓	✓				
900403-6A	4-3	1700		X	1	✓	✓	✓	✓				
Relinquished by: (Signature) <i>Bill Harris</i>		Date/Time	Received by: (Signature) <i>Scott White</i>	Date/Time	Relinquished by: (Signature) <i>Scott White</i>	Date/Time	Received by: (Signature) <i>Ken Spurlin</i>						
(Printed) <i>BILL HARRIS</i>		4-3-90 1740	(Printed) <i>SCOTT WHITE</i>	4-3-90 1740	(Printed) <i>SCOTT WHITE</i>	4-4-90 0813	(Printed) <i>KEN SPURLIN</i>						
Relinquished by: (Signature) <i>Ken Spurlin</i>		Date/Time	Received for Laboratory by: (Signature) <i>Pete Culbreth</i>	Date/Time	Remarks								
(Printed) <i>KEN SPURLIN</i>		4-4 1130	(Printed) <i>Pete Culbreth</i>	4-4 1130	LAS: PLEASE REPORT AS "THOMASON LUMBER AND TIMBER CO."								

928 AIRPORT ROAD  
HOT SPRINGS, AR 71913  
(501) 767-2366

CHAIN OF CUSTODY RECORD

[illegible]





ENGINEERING, INC.

928 AIRPORT ROAD, HOT SPRINGS, ARKANSAS 71913  
(501) 767-2366

# CONDUCTIVITY CALIBRATION

[illegible]

**ENGINEERING, INC.**

928 AIRPORT ROAD, HOT SPRINGS, ARKANSAS 71913  
(501) 767-2366

# pH METER CALIBRATION RECORD

[illegible]

# DECONTAMINATION RECORD

[illegible]

# DECONTAMINATION RECORD

Type Equipment	Wash Person	Date	Time	Decon Procedure/Remarks
P-1A BAILER	BEH	3-29-90	0720	ALLO-NOX + TAPWATER SCRUB, HEXANE RINSE + DI WATER
P-1C "	BEH	3-29-90	0745	"
P-1D "	BEH	3-29-90	0815	"
P-4A "	BEH	3-29-90	0845	"
P-4C "	BEH	3-29-90	0937	"
P-4D "	BEH	3-29-90	1000	"
P-5C "	BEH	3-29-90	1025	"
P-5D "	BEH	3-29	1045	"
P-5A "	BEH	3-29	1230	"
P-6A "	BEH	3-29	1240	"
P-6C "	BEH	3-29	1310	"
P-2A 3" BAILER	BEH	3-29	1500	"
P-2C 3" BAILER	BEH	3-29	1531	"
P-2D 3" BAILER	BEH	3-29	1600	"
P-2A BAILER	BEH	3-30 3-29	0900	"
P-2C BAILER	BEH	3-30	0925	"
P-2D BAILER	BEH	3-30	0950	"
P-5A BAILER	LRB	4-5	0750	"
P-4A BAILER	LRB	4-5	0815	"
P-2C "	LRB	4-5	0840	"
P-4C "	LRB	4-5	0900	"
P-1A "	LRB	4-5	0914	"
P-4D "	LRB	4-5	0929	"
P-2A "	LRB	4-5	0944	"
P-1D "	LRB	4-5	0958	"



THOMASON LUMBER AND TIMBER CO.  
BROKEN BOW, OKLAHOMA  
GROUNDWATER SAMPLING RECORD

MONITORING WELL NO. 1A  
DATE AND TIME OF SAMPLING: 4-3, 1990 1430 HOURS  
SAMPLE COLLECTED BY: PWB, BEH, LRB OF B & F ENGINEERING, INC.  
WEATHER: SUNNY  
SAMPLING LOCATION JLC MONITOR WELL SAMPLING PERIOD: \_\_\_\_\_ QUARTER 19

A. MONITOR WELL CONDITION:

☒ Locked ☐ Unlocked  
Well Number (IS) - IS NOT) Apparent  
Steel Casing Condition is: GOOD  
Inner PVC Casing Condition is: GOOD  
Depth Measurement Datum (IS) - IS NOT) Apparent  
Datum for Depth Measurements: ☒ High point on top of PVC casing; \_\_\_\_\_ Other \_\_\_\_\_  
Total Depth of Well: Actual 87.64 (ft.): Installed \_\_\_\_\_ (ft)  
None Deficiencies Corrected by Sample Collector  
NO Repairs Required (Describe): \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

B. WELL EVACUATION:

1. Water Depth 40.94 Ft. below datum  
Measured With: ☒ Water Level Indicator  
\_\_\_\_\_ Other (Describe: \_\_\_\_\_)
2. Purge Method  
\_\_\_\_\_ Pump, (Type: \_\_\_\_\_)  
☒ Bailer (Size: ~~2~~ 3')
3. Volume Removed: (Refer to Bailing Tables)  
☒ Full Bailers: Required 92 Actual 92  
\_\_\_\_\_ Well Purged Dry  
\_\_\_\_\_ Gallons, if pumped
4. ☒ Condition of Water during Evacuation  
\_\_\_\_\_ Oil Droplets \_\_\_\_\_ Suspended Sediment  
\_\_\_\_\_ Oil Phases ☒ Clear  
\_\_\_\_\_ Muddy \_\_\_\_\_ Chemical Odor  
\_\_\_\_\_ Other \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_
5. ☒ All equipment decontaminated in accordance with current sampling and analysis plan.

C. SAMPLE EXTRACTION:

1. Type Sample: ☒ Grab ☐ Composite
2. Method of Extraction: Teflon Bailer
3. ☒ Condition of Water During Extraction
 

<input type="checkbox"/> Oil Droplets	<input type="checkbox"/> Suspended Sediment
<input type="checkbox"/> Oil Phases	<input checked="" type="checkbox"/> Clear
<input type="checkbox"/> Muddy	<input type="checkbox"/> Chemical Odor
<input type="checkbox"/> Other	

D. ON-SITE MEASUREMENTS

	<u>First Bailer</u>				<u>Last Bailer</u>	
Temperature	<u>19.6</u>		<u>19.6</u>		<u>19.0</u>	
pH	<u>4.8</u>	<u>4.6</u>	<u>4.6</u>	<u>4.5</u>	<u>5.1</u>	<u>5.2</u>
Conductivity	<u>49</u>	<u>89</u>	<u>50</u>	<u>49</u>	<u>51</u>	<u>54</u>

E. SAMPLE CONTAINERS

<u>Sample Number</u>	<u>Container</u>	<u>Parameter(s)</u>	<u>Preservation</u>	
			<u>None</u>	<u>Added</u>
				<u>By Lab</u>
<u>900403</u>	40 ml glass vial			
<u>900403-1A</u>	1 liter amber glass	PCP, ACENAPHTHYLENE FLUORANTHENE, NAPHTHALENE	<input checked="" type="checkbox"/>	
FIELD BLANK <u>900403-1A-1 liter</u>	<del>1 gal</del> amber glass	"	<input checked="" type="checkbox"/>	
	250 ml plastic			
	250 ml plastic			
	1/2 gal plastic			
	Other (Describe)			

F. ON-SITE SAMPLE FILTRATION

☒ None:                      On-Site (Describe Method & Containers)                     

G. CONTAINER HANDLING:

- ☒ Container Sides Labeled
- ☒ Containers Placed in Ice Chest
- ☒ Chain-of-Custody documentation completed.

H. ☒ All Equipment Decontaminated in accordance with current sampling and analysis plan.

I. OTHER COMMENTS: No

J. SAMPLER'S SIGNATURE Bill Harris DATE: 4-3-90  
Monitor Well No. 1A

THOMASON LUMBER AND TIMBER CO.  
BROKEN BOW, OKLAHOMA  
GROUNDWATER SAMPLING RECORD

MONITORING WELL NO. 1C  
DATE AND TIME OF SAMPLING: 4-4-90, 19 1140 HOURS  
SAMPLE COLLECTED BY: BEH, LRB, PWB, FOC OF B & F ENGINEERING, INC.  
WEATHER: SUNNY + HOT  
SAMPLING LOCATION MOWO SAMPLING PERIOD: \_\_\_\_\_ QUARTER 19 \_\_\_\_\_

A. MONITOR WELL CONDITION:

☒ Locked \_\_\_\_\_ Unlocked  
Well Number (IS) - IS NOT) Apparent  
Steel Casing Condition is: OK  
Inner PVC Casing Condition is: OK  
Depth Measurement Datum (IS) - IS NOT) Apparent  
Datum for Depth Measurements: ☒ High point on top of PVC casing; \_\_\_\_\_ Other \_\_\_\_\_  
Total Depth of Well: Actual 69.61 (ft.): Installed \_\_\_\_\_ (ft)  
☒ Deficiencies Corrected by Sample Collector  
☒ Repairs Required (Describe): NONE

B. WELL EVACUATION:

1. Water Depth 38.37 Ft. below datum  
Measured With: \_\_\_\_\_ Water Level Indicator  
\_\_\_\_\_ Other (Describe: \_\_\_\_\_)
2. Purge Method  
\_\_\_\_\_ Pump, (Type: \_\_\_\_\_)  
☒ Bailer (Size: 3')
3. Volume Removed: (Refer to Bailing Tables)  
\_\_\_\_\_ Full Bailers: Required 61 Actual 20  
\_\_\_\_\_ Well Purged Dry  
\_\_\_\_\_ Gallons, if pumped
4. ☒ Condition of Water during Evacuation  
\_\_\_\_\_ Oil Droplets \_\_\_\_\_ Suspended Sediment  
\_\_\_\_\_ Oil Phases ☒ Clear  
\_\_\_\_\_ Muddy \_\_\_\_\_ Chemical Odor  
☒ Other Cloudy after bailed down to screen
5. ☒ All equipment decontaminated in accordance with current sampling and analysis plan.

C. SAMPLE EXTRACTION:

1. Type Sample: Y Grab        Composite

2. Method of Extraction: Teflon Bailer

3. X Condition of Water During Extraction

       Oil Droplets X Suspended Sediment

       Oil Phases X Clear

       Muddy        Chemical Odor

X Other well has recovered to 2.0' of water

D. ON-SITE MEASUREMENTS

	<u>First Bailer</u>				<u>Last Bailer</u>	
Temperature	<u>18.5</u>	<u>      </u>	<u>      </u>	<u>      </u>	<u>18.9</u>	<u>      </u>
pH	<u>4.9</u>	<u>5.1</u>	<u>4.9</u>	<u>5.0</u>	<u>5.0</u>	<u>5.0</u>
Conductivity	<u>41</u>	<u>44</u>	<u>42</u>	<u>44</u>	<u>39</u>	<u>40</u>

E. SAMPLE CONTAINERS

<u>Sample Number</u>	<u>Container</u>	<u>Parameter(s)</u>	<u>Preservation</u>	
			<u>None</u>	<u>Added</u> <u>By Lab</u>
<u>900404 - 1C</u>	40 ml glass vial			
	1 liter amber glass	PCP, ACENAPHTHYLENE FLUORANTHENE, NAPHTHALENE		
	1 gal amber glass			
	250 ml plastic			
	250 ml plastic			
	1/2 gal plastic			
	Other (Describe)			

F. ON-SITE SAMPLE FILTRATION

X None:        On-Site (Describe Method & Containers)       

G. CONTAINER HANDLING:

X Container Sides Labeled

X Containers Placed in Ice Chest

X Chain-of-Custody documentation completed.

H. X All Equipment Decontaminated in accordance with current sampling and analysis plan.

I. OTHER COMMENTS: No

J. SAMPLER'S SIGNATURE

Bill Harris

DATE: 4-4-90

Monitor Well No. 1c

THOMASON LUMBER AND TIMBER CO.  
BROKEN BOW, OKLAHOMA  
GROUNDWATER SAMPLING RECORD

MONITORING WELL NO. 1 D  
DATE AND TIME OF SAMPLING: 4-4-90, 19 1120 HOURS  
SAMPLE COLLECTED BY: BEH, PWB, FCC, IRB OF B & F ENGINEERING, INC.  
WEATHER: Sunny + Hot  
SAMPLING LOCATION MoWo SAMPLING PERIOD: \_\_\_\_\_ QUARTER 19 \_\_\_\_\_

A. MONITOR WELL CONDITION:

☒ Locked \_\_\_\_\_ Unlocked  
Well Number (IS) - IS NOT) Apparent  
Steel Casing Condition is: OK  
Inner PVC Casing Condition is: OK  
Depth Measurement Datum (IS) - IS NOT) Apparent  
Datum for Depth Measurements: ☒ High point on top of PVC casing; \_\_\_\_\_ Other \_\_\_\_\_  
Total Depth of Well: Actual 58.30 (ft.): Installed \_\_\_\_\_ (ft)  
☒ Deficiencies Corrected by Sample Collector  
☒ Repairs Required (Describe): NONE

B. WELL EVACUATION:

1. Water Depth 38.57 Ft. below datum  
Measured With: ☒ Water Level Indicator  
\_\_\_\_\_ Other (Describe: \_\_\_\_\_)
2. Purge Method  
\_\_\_\_\_ Pump, (Type: \_\_\_\_\_)  
☒ Bailer (Size: 3')
3. Volume Removed: (Refer to Bailing Tables)  
☒ Full Bailers: Required 39 Actual 39  
\_\_\_\_\_ Well Purged Dry  
\_\_\_\_\_ Gallons, if pumped
4. ☒ Condition of Water during Evacuation  
\_\_\_\_\_ Oil Droplets \_\_\_\_\_ Suspended Sediment  
\_\_\_\_\_ Oil Phases ☒ Clear  
\_\_\_\_\_ Muddy \_\_\_\_\_ Chemical Odor  
\_\_\_\_\_ Other \_\_\_\_\_
5. ☒ All equipment decontaminated in accordance with current sampling and analysis plan.

C. SAMPLE EXTRACTION:

1. Type Sample: X Grab \_\_\_\_\_ Composite
2. Method of Extraction: Teflon Bailer
3. X Condition of Water During Extraction
 

<u>      </u> Oil Droplets	<u>X</u> Suspended Sediment
<u>      </u> Oil Phases	<u><del>X</del></u> Clear
<u>      </u> Muddy	<u>      </u> Chemical Odor
<u>      </u> Other _____	

D. ON-SITE MEASUREMENTS

	<u>First Bailer</u>				<u>Last Bailer</u>	
Temperature	<u>19.0</u>				<u>18.9</u>	
pH	<u>4.3</u>	<u>4.8</u>	<u>4.9</u>	<u>4.6</u>	<u>5.0</u>	<u>4.7</u>
Conductivity	<u>42</u>	<u>44</u>	<u>44</u>	<u>42</u>	<u>51</u>	<u>46</u>

E. SAMPLE CONTAINERS

<u>Sample Number</u>	<u>Container</u>	<u>Parameter(s)</u>	<u>Preservation</u>	
			<u>None</u>	<u>Added</u> <u>By Lab</u>
	40 ml glass vial		<u>      </u>	<u>      </u>
<u>900404-1D</u>	1 liter amber glass	<u>PCP, ACENAPHTHYLENE</u>	<u>      </u>	<u>      </u>
	1 gal amber glass	<u>FLUORANTHENE, NAPHTHALENE</u>	<u>      </u>	<u>      </u>
	250 ml plastic		<u>      </u>	<u>      </u>
	250 ml plastic		<u>      </u>	<u>      </u>
	1/2 gal plastic		<u>      </u>	<u>      </u>
	Other (Describe) _____		<u>      </u>	<u>      </u>

F. ON-SITE SAMPLE FILTRATION

X None: \_\_\_\_\_ On-Site (Describe Method & Containers) \_\_\_\_\_

G. CONTAINER HANDLING:

- X Container Sides Labeled
- X Containers Placed in Ice Chest
- X Chain-of-Custody documentation completed.

H. X All Equipment Decontaminated in accordance with current sampling and analysis plan.

I. OTHER COMMENTS: No \_\_\_\_\_

J. SAMPLER'S SIGNATURE Bill Harris DATE: 4-4-90

Monitor Well No. ~~40~~  
1D

THOMASON LUMBER AND TIMBER CO.  
BROKEN BOW, OKLAHOMA  
GROUNDWATER SAMPLING RECORD

MONITORING WELL NO. 2A  
DATE AND TIME OF SAMPLING: 4-3, 1990 1500 HOURS  
SAMPLE COLLECTED BY: PWB, BEH, LRB OF B & F ENGINEERING, INC.  
WEATHER: SUNNY + HOT  
SAMPLING LOCATION TLC MON. WELL SAMPLING PERIOD: \_\_\_\_\_ QUARTER 19\_\_\_\_

A. MONITOR WELL CONDITION:

☒ Locked ☐ Unlocked  
Well Number (IS) - IS NOT) Apparent  
Steel Casing Condition is: Good  
Inner PVC Casing Condition is: Good  
Depth Measurement Datum (IS) - IS NOT) Apparent  
Datum for Depth Measurements: ☒ High point on top of PVC casing; ☐ Other \_\_\_\_\_  
Total Depth of Well: Actual 99.35 (ft.): Installed \_\_\_\_\_ (ft)  
None Deficiencies Corrected by Sample Collector  
None Repairs Required (Describe): \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

B. WELL EVACUATION:

1. Water Depth 48.37 Ft. below datum  
Measured With: ☒ Water Level Indicator  
☐ Other (Describe: \_\_\_\_\_)
2. Purge Method  
☐ Pump, (Type: \_\_\_\_\_)  
☒ Bailer (Size: 3" x 3')
3. Volume Removed: (Refer to Bailing Tables)  
☒ Full Bailers: Required 86 Actual 86  
☐ Well Purged Dry  
☐ Gallons, if pumped
4. ☒ Condition of Water during Evacuation  

<input type="checkbox"/> Oil Droplets	<input type="checkbox"/> Suspended Sediment
<input type="checkbox"/> Oil Phases	<input checked="" type="checkbox"/> Clear
<input type="checkbox"/> Muddy	<input type="checkbox"/> Chemical Odor
<input type="checkbox"/> Other _____	

  
\_\_\_\_\_  
\_\_\_\_\_
5. ☒ All equipment decontaminated in accordance with current sampling and analysis plan.





THOMASON LUMBER AND TIMBER CO.  
BROKEN BOW, OKLAHOMA  
GROUNDWATER SAMPLING RECORD

MONITORING WELL NO. 2c  
DATE AND TIME OF SAMPLING: 4-3-90, 19   1520 HOURS  
SAMPLE COLLECTED BY: BEH, PWB, LRR OF B & F ENGINEERING, INC.  
WEATHER: SUNNY + HOT  
SAMPLING LOCATION MONITOR WELL SAMPLING PERIOD:            QUARTER 19  

A. MONITOR WELL CONDITION:

☒ Locked ☐ Unlocked  
Well Number (IS) - IS NOT) Apparent  
Steel Casing Condition is: OK  
Inner PVC Casing Condition is: OK  
Depth Measurement Datum (IS) - IS NOT) Apparent  
Datum for Depth Measurements: ☒ High point on top of PVC casing; ☐ Other             
Total Depth of Well: Actual 64.58 (ft.): Installed            (ft)  
None Deficiencies Corrected by Sample Collector  
NO Repairs Required (Describe):             
            
          

B. WELL EVACUATION:

1. Water Depth 41.48 Ft. below datum  
Measured With: ☒ Water Level Indicator  
☐ Other (Describe:           )
2. Purge Method  
☐ Pump, (Type:           )  
☒ Bailer (Size: 3')
3. Volume Removed: (Refer to Bailing Tables)  
☒ Full Bailers: Required 39 Actual 39  
☐ Well Purged Dry  
☐ Gallons, if pumped
4. ☒ Condition of Water during Evacuation  
☐ Oil Droplets ☒ Suspended Sediment Small amt  
☐ Oil Phases ☐ Clear  
☐ Muddy ☐ Chemical Odor  
☐ Other
5. ☒ All equipment decontaminated in accordance with current sampling and analysis plan.

C. SAMPLE EXTRACTION:

1. Type Sample: X Grab \_\_\_\_\_ Composite
2. Method of Extraction: Teflon Bailer
3. X Condition of Water During Extraction
 

_____ Oil Droplets	_____ Suspended Sediment
_____ Oil Phases	<u>X</u> Clear
_____ Muddy	_____ Chemical Odor
_____ Other _____	

D. ON-SITE MEASUREMENTS

		<u>First Bailer</u>				<u>Last Bailer</u>	
Temperature	<u>19.6</u>					<u>19.2</u>	
pH	<u>4.2</u>	<u>3.9</u>	<u>3.9</u>	<u>3.8</u>		<u>4.1</u>	<u>3.9</u>
Conductivity	<u>42</u>	<u>40</u>	<u>41</u>	<u>41</u>		<u>40</u>	<u>40</u>

E. SAMPLE CONTAINERS

<u>Sample Number</u>	<u>Container</u>	<u>Parameter(s)</u>	<u>Preservation</u>	
			<u>None</u>	<u>Added</u>
				<u>By Lab</u>
	40 ml glass vial			
<u>900403-2C</u>	1 liter amber glass	PCP, ACENAPHTHYLENE FLUORANTHENE, NAPHTHALENE	<u>2</u>	
	1 gal amber glass		<u>✓</u>	
	250 ml plastic			
	250 ml plastic			
	1/2 gal plastic			
	Other (Describe)			

F. ON-SITE SAMPLE FILTRATION

X None: \_\_\_\_\_ On-Site (Describe Method & Containers) \_\_\_\_\_

G. CONTAINER HANDLING:

- X Container Sides Labeled
- X Containers Placed in Ice Chest
- X Chain-of-Custody documentation completed.

H. X All Equipment Decontaminated in accordance with current sampling and analysis plan.

I. OTHER COMMENTS: NO

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

J. SAMPLER'S SIGNATURE Bill Harris DATE: 4-3-90

Monitor Well No. 2C

THOMASON LUMBER AND TIMBER CO.  
BROKEN BOW, OKLAHOMA  
GROUNDWATER SAMPLING RECORD

MONITORING WELL NO. 2 D  
DATE AND TIME OF SAMPLING: 4-3-90, 19   1540 HOURS  
SAMPLE COLLECTED BY: PWB, BEH, LRB OF B & F ENGINEERING, INC.  
WEATHER: SUNNY & HOT  
SAMPLING LOCATION MONITOR WELL SAMPLING PERIOD:            QUARTER 19  

A. MONITOR WELL CONDITION:

☒ Locked ☐ Unlocked  
Well Number (IS) - IS NOT) Apparent  
Steel Casing Condition is: OK  
Inner PVC Casing Condition is: OK  
Depth Measurement Datum (IS) - IS NOT) Apparent  
Datum for Depth Measurements: ☒ High point on top of PVC casing;            Other             
Total Depth of Well: Actual 55.38 (ft.): Installed            (ft)  
None Deficiencies Corrected by Sample Collector  
None Repairs Required (Describe):             
            
          

B. WELL EVACUATION:

1. Water Depth 41.51 Ft. below datum  
Measured With: ☒ Water Level Indicator  
           Other (Describe:           )
2. Purge Method  
           Pump, (Type:           )  
☒ Bailer (Size: 3')
3. Volume Removed: (Refer to Bailing Tables)  
☒ Full Bailers: Required 23 Actual 23  
           Well Purged Dry  
           Gallons, if pumped
4. ☒ Condition of Water during Evacuation  
           Oil Droplets            Suspended Sediment  
           Oil Phases            Clear  
           Muddy            Chemical Odor  
☒ Other (1) very slight discoloration
5. ☒ All equipment decontaminated in accordance with current sampling and analysis plan.

C. SAMPLE EXTRACTION:

1. Type Sample: X Grab \_\_\_\_\_ Composite

2. Method of Extraction: Teflon Bailer

3. X Condition of Water During Extraction

\_\_\_\_\_ Oil Droplets \_\_\_\_\_ Suspended Sediment  
 \_\_\_\_\_ Oil Phases X Clear  
 \_\_\_\_\_ Muddy \_\_\_\_\_ Chemical Odor  
 \_\_\_\_\_ Other \_\_\_\_\_

D. ON-SITE MEASUREMENTS

	First Bailer				Last Bailer	
Temperature	19.7					
pH	5.3	5.2	5.1	5.2	5.1	5.2
Conductivity	104	111	113	119	67	74

E. SAMPLE CONTAINERS

Sample Number	Container	Parameter(s)	Preservation	
			None	Added By Lab
	40 ml glass vial			<u>X</u>
900403-2D	1 liter amber glass	PCP, ACENAPHTHYLENE, FLUORANTHENE, NAPHTHRENE		<u>X</u>
duplicate → 900403-2D-1	1 <del>gal</del> <sup>liter</sup> amber glass	"		<u>X</u>
	250 ml plastic			
	250 ml plastic			
	1/2 gal plastic			
	Other (Describe)			

F. ON-SITE SAMPLE FILTRATION

X None: \_\_\_\_\_ On-Site (Describe Method & Containers) \_\_\_\_\_

G. CONTAINER HANDLING:

X Container Sides Labeled  
X Containers Placed in Ice Chest  
X Chain-of-Custody documentation completed.

H. X All Equipment Decontaminated in accordance with current sampling and analysis plan.

I. OTHER COMMENTS: No  
 \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_

J. SAMPLER'S SIGNATURE Bill Harris DATE: 4-3-90  
 Monitor Well No. 2D

DUPLICATE OF 2D

THOMASON LUMBER AND TIMBER CO.  
BROKEN BOW, OKLAHOMA  
GROUNDWATER SAMPLING RECORD

MONITORING WELL NO. 2D-1

DATE AND TIME OF SAMPLING: \_\_\_\_\_, 19\_\_\_\_ HOURS

SAMPLE COLLECTED BY: \_\_\_\_\_ OF B & F ENGINEERING, INC.

WEATHER: \_\_\_\_\_

SAMPLING LOCATION \_\_\_\_\_ SAMPLING PERIOD: \_\_\_\_\_ QUARTER 19\_\_\_\_

A. MONITOR WELL CONDITION:

\_\_\_\_ Locked \_\_\_\_ Unlocked

Well Number (IS - IS NOT) Apparent

Steel Casing Condition is: \_\_\_\_\_

Inner PVC Casing Condition is: \_\_\_\_\_

Depth Measurement Datum (IS - IS NOT) Apparent

Datum for Depth Measurements: \_\_\_\_\_ High point on top of PVC casing; \_\_\_\_\_ Other \_\_\_\_\_

Total Depth of Well: Actual \_\_\_\_\_ (ft.): Installed \_\_\_\_\_ (ft)

\_\_\_\_ Deficiencies Corrected by Sample Collector

\_\_\_\_ Repairs Required (Describe): \_\_\_\_\_

B. WELL EVACUATION:

1. Water Depth \_\_\_\_\_ Ft. below datum

Measured With: \_\_\_\_\_ Water Level Indicator

\_\_\_\_ Other (Describe: \_\_\_\_\_)

2. Purge Method

\_\_\_\_ Pump, (Type: \_\_\_\_\_)

\_\_\_\_ Bailer (Size: \_\_\_\_\_)

3. Volume Removed: (Refer to Bailing Tables)

\_\_\_\_ Full Bailers: Required \_\_\_\_\_ Actual \_\_\_\_\_

\_\_\_\_ Well Purged Dry

\_\_\_\_ Gallons, if pumped

4. \_\_\_\_ Condition of Water during Evacuation

\_\_\_\_ Oil Droplets \_\_\_\_ Suspended Sediment

\_\_\_\_ Oil Phases \_\_\_\_ Clear

\_\_\_\_ Muddy \_\_\_\_ Chemical Odor

\_\_\_\_ Other \_\_\_\_\_

5. \_\_\_\_ All equipment decontaminated in accordance with current sampling and analysis plan.

SEE  
SHEET  
FOR  
2-D

C. SAMPLE EXTRACTION:

1. Type Sample: X Grab \_\_\_\_\_ Composite

2. Method of Extraction: Teflon Bailer

3. X Condition of Water During Extraction

\_\_\_\_\_ Oil Droplets \_\_\_\_\_ Suspended Sediment  
 \_\_\_\_\_ Oil Phases \_\_\_\_\_ Clear  
 \_\_\_\_\_ Muddy \_\_\_\_\_ Chemical Odor  
 \_\_\_\_\_ Other \_\_\_\_\_

D. ON-SITE MEASUREMENTS

	First Bailer				Last Bailer	
Temperature	19.7				19.6	
pH	5.2	5.2	5.1	5.2	5.0	5.2
Conductivity	101	119	110	109	70	63

E. SAMPLE CONTAINERS

Sample Number	Container	Parameter(s)	Preservation	
			None	Added By Lab
	40 ml glass vial			
	1 liter amber glass			
2D-1	1 gal amber glass			
	250 ml plastic			
	250 ml plastic			
	1/2 gal plastic			
	Other (Describe)			

F. ON-SITE SAMPLE FILTRATION

X None: \_\_\_\_\_ On-Site (Describe Method & Containers) \_\_\_\_\_

G. CONTAINER HANDLING:

X Container Sides Labeled  
X Containers Placed in Ice Chest  
X Chain-of-Custody documentation completed.

H. X All Equipment Decontaminated in accordance with current sampling and analysis plan.

I. OTHER COMMENTS: No  
 \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_

J. SAMPLER'S SIGNATURE Bill Harris DATE: 4-3-90  
 Monitor Well No. 2D-1

THOMASON LUMBER AND TIMBER CO.  
BROKEN BOW, OKLAHOMA  
GROUNDWATER SAMPLING RECORD

MONITORING WELL NO. 4A  
DATE AND TIME OF SAMPLING: 4-3-90, 19 1610 HOURS  
SAMPLE COLLECTED BY: BEH, PWB, LKB OF B & F ENGINEERING, INC.  
WEATHER: SUNNY + HOT  
SAMPLING LOCATION MoWo SAMPLING PERIOD: \_\_\_\_\_ QUARTER 19 \_\_\_\_\_

A. MONITOR WELL CONDITION:

☒ Locked ☐ Unlocked  
Well Number (IS) - IS NOT) Apparent  
Steel Casing Condition is: OK  
Inner PVC Casing Condition is: OK  
Depth Measurement Datum (IS) - IS NOT) Apparent  
Datum for Depth Measurements: ☒ High point on top of PVC casing; ☐ Other \_\_\_\_\_  
Total Depth of Well: Actual 102.06 (ft.): Installed \_\_\_\_\_ (ft)  
None Deficiencies Corrected by Sample Collector  
None Repairs Required (Describe): \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

B. WELL EVACUATION:

1. Water Depth 37.88 Ft. below datum  
Measured With: ☒ Water Level Indicator  
☐ Other (Describe: \_\_\_\_\_)
2. Purge Method  
☐ Pump, (Type: \_\_\_\_\_)  
☒ Bailer (Size: 3')
3. Volume Removed: (Refer to Bailing Tables)  
☒ Full Bailers: Required 127 Actual 127  
☐ Well Purged Dry  
☐ Gallons, if pumped
4. ☒ Condition of Water during Evacuation  
☐ Oil Droplets ☒ Suspended Sediment Slightly discolored  
☐ Oil Phases ☐ Clear  
☐ Muddy ☐ Chemical Odor  
☐ Other \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_
5. ☒ All equipment decontaminated in accordance with current sampling and analysis plan.

C. SAMPLE EXTRACTION:1. Type Sample: X Grab \_\_\_\_\_ Composite

2. Method of Extraction: Teflon Bailer

3. X Condition of Water During Extraction\_\_\_\_\_ Oil Droplets X Suspended Sediment

\_\_\_\_\_ Oil Phases \_\_\_\_\_ Clear

\_\_\_\_\_ Muddy \_\_\_\_\_ Chemical Odor

\_\_\_\_\_ Other \_\_\_\_\_

D. ON-SITE MEASUREMENTS

	<u>First Bailer</u>				<u>Last Bailer</u>	
Temperature	<u>19.1</u>				<u>18.7</u>	
pH	<u>5.8</u>	<u>5.9</u>	<u>5.8</u>	<u>5.7</u>	<u>5.2</u>	<u>5.2</u>
Conductivity	<u>69</u>	<u>70</u>	<u>70</u>	<u>72</u>	<u>69</u>	<u>71</u>

E. SAMPLE CONTAINERS

<u>Sample Number</u>	<u>Container</u>	<u>Parameter(s)</u>	<u>Preservation</u>	
			<u>None</u>	<u>Added</u>
				<u>By Lab</u>
	40 ml glass vial			
<u>900403-4A</u>	1 liter amber glass	PCP, ACENAPHTHYLENE FLOO RANTHENE, NAPHTHALENE		<u>✓</u>
	1 gal amber glass			
	250 ml plastic			
	250 ml plastic			
	1/2 gal plastic			
	Other (Describe)			

F. ON-SITE SAMPLE FILTRATIONX None: \_\_\_\_\_ On-Site (Describe Method & Containers) \_\_\_\_\_G. CONTAINER HANDLING:X Container Sides LabeledX Containers Placed in Ice ChestX Chain-of-Custody documentation completed.H. X All Equipment Decontaminated in accordance with current sampling and analysis plan.

I. OTHER COMMENTS: \_\_\_\_\_

J. SAMPLER'S SIGNATURE Bill Harris DATE: 4-3-90Monitor Well No. 4A



THOMASON LUMBER AND TIMBER CO.  
BROKEN BOW, OKLAHOMA  
GROUNDWATER SAMPLING RECORD

MONITORING WELL NO. 4 #C  
DATE AND TIME OF SAMPLING: 4-3-90, 19 1630 HOURS  
SAMPLE COLLECTED BY: BEH, PLB, LRB OF B & F ENGINEERING, INC.  
WEATHER: SUNNY + HOT  
SAMPLING LOCATION MOWO SAMPLING PERIOD: \_\_\_\_\_ QUARTER 19 \_\_\_\_\_

A. MONITOR WELL CONDITION:

☒ Locked \_\_\_\_\_ Unlocked  
Well Number (IS) - IS NOT) Apparent  
Steel Casing Condition is: OK  
Inner PVC Casing Condition is: OK  
Depth Measurement Datum (IS) - IS NOT) Apparent  
Datum for Depth Measurements: X High point on top of PVC casing; \_\_\_\_\_ Other \_\_\_\_\_  
Total Depth of Well: Actual 63.38 (ft.): Installed \_\_\_\_\_ (ft)  
☒ Deficiencies Corrected by Sample Collector  
☒ Repairs Required (Describe): NONE

B. WELL EVACUATION:

1. Water Depth 30.35 Ft. below datum  
Measured With: \_\_\_\_\_ Water Level Indicator  
\_\_\_\_\_ Other (Describe: \_\_\_\_\_)
2. Purge Method  
\_\_\_\_\_ Pump, (Type: \_\_\_\_\_)  
☒ Bailer (Size: 3')
3. Volume Removed: (Refer to Bailing Tables)  
\_\_\_\_\_ Full Bailers: Required 32 Actual 32  
\_\_\_\_\_ Well Purged Dry  
\_\_\_\_\_ Gallons, if pumped
4. ☒ Condition of Water during Evacuation  
\_\_\_\_\_ Oil Droplets \_\_\_\_\_ Suspended Sediment  
\_\_\_\_\_ Oil Phases ☒ Clear  
\_\_\_\_\_ Muddy \_\_\_\_\_ Chemical Odor  
\_\_\_\_\_ Other \_\_\_\_\_
5. ☒ All equipment decontaminated in accordance with current sampling and analysis plan.

C. SAMPLE EXTRACTION:

1. Type Sample: X Grab \_\_\_\_\_ Composite
2. Method of Extraction: Teflon Bailer
3. X Condition of Water During Extraction
 

_____ Oil Droplets	<u>X</u> Suspended Sediment slight
_____ Oil Phases	_____ Clear
_____ Muddy	_____ Chemical Odor
_____ Other _____	

D. ON-SITE MEASUREMENTS

		<u>First Bailer</u>				<u>Last Bailer</u>	
Temperature	<u>18.7</u>					<u>18.5</u>	
pH	<u>5.2</u>	<u>5.2</u>	<u>5.3</u>	<u>5.3</u>	<u>5.3</u>	<u>5.4</u>	
Conductivity	<u>64</u>	<u>63</u>	<u>65</u>	<u>65</u>	<u>66</u>	<u>65</u>	

E. SAMPLE CONTAINERS

<u>Sample Number</u>	<u>Container</u>	<u>Parameter(s)</u>	<u>Preservation</u>	
			<u>None</u>	<u>Added</u> <u>By Lab</u>
	40 ml glass vial			
<u>900403-4</u>	1 liter amber glass	<u>PCP, ACENAPHTHYLENE</u> <u>FLUORANTHENE, NAPHTHALENE</u>		<u>✓</u>
	1 gal amber glass			
	250 ml plastic			
	250 ml plastic			
	1/2 gal plastic			
	Other (Describe)			

F. ON-SITE SAMPLE FILTRATION

X None: \_\_\_\_\_ On-Site (Describe Method & Containers) \_\_\_\_\_

G. CONTAINER HANDLING:

- X Container Sides Labeled
- X Containers Placed in Ice Chest
- X Chain-of-Custody documentation completed.

H. X All Equipment Decontaminated in accordance with current sampling and analysis plan.

I. OTHER COMMENTS: No

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

J. SAMPLER'S SIGNATURE Bill Harris DATE: 4-3-90

Monitor Well No. 4

## GROUNDWATER SAMPLING RECORD

MONITORING WELL NO. 4 D

DATE AND TIME OF SAMPLING: 4-4-90, 191050 HOURS

SAMPLE COLLECTED BY: BEH, PWB, FOC, LRB OF B & F ENGINEERING, INC.

WEATHER: SUNNY + HOT

SAMPLING LOCATION m. w. SAMPLING PERIOD: QUARTER 19

A. MONITOR WELL CONDITION:

X	Locked	Unlocked
1	0	0
2	0	0
3	0	0
4	0	0
5	0	0
6	0	0
7	0	0
8	0	0
9	0	0
10	0	0
11	0	0
12	0	0
13	0	0
14	0	0
15	0	0
16	0	0
17	0	0
18	0	0
19	0	0
20	0	0
21	0	0
22	0	0
23	0	0
24	0	0
25	0	0
26	0	0
27	0	0
28	0	0
29	0	0
30	0	0
31	0	0
32	0	0
33	0	0
34	0	0
35	0	0
36	0	0
37	0	0
38	0	0
39	0	0
40	0	0
41	0	0
42	0	0
43	0	0
44	0	0
45	0	0
46	0	0
47	0	0
48	0	0
49	0	0
50	0	0
51	0	0
52	0	0
53	0	0
54	0	0
55	0	0
56	0	0
57	0	0
58	0	0
59	0	0
60	0	0
61	0	0
62	0	0
63	0	0
64	0	0
65	0	0
66	0	0
67	0	0
68	0	0
69	0	0
70	0	0
71	0	0
72	0	0
73	0	0
74	0	0
75	0	0
76	0	0
77	0	0
78	0	0
79	0	0
80	0	0
81	0	0
82	0	0
83	0	0
84	0	0
85	0	0
86	0	0
87	0	0
88	0	0
89	0	0
90	0	0
91	0	0
92	0	0
93	0	0
94	0	0
95	0	0
96	0	0
97	0	0
98	0	0
99	0	0
100	0	0

Well Number (IS) - IS NOT) Apparent

Steel Casing Condition is: OK

Inner PVC Casing Condition is: OK

Depth Measurement Datum (IS) - IS NOT) Apparent

Datum for Depth Measurements: X High point on top of PVC casing; Other \_\_\_\_\_

Total Depth of Well: Actual 45.31 (ft.): Installed \_\_\_\_\_ (ft)

X Deficiencies Corrected by Sample Collector

☒ Repairs Required (Describe): None

B. WELL EVACUATION:

1. Water Depth      29.09      Ft. below datum

Measured With: ✓ Water Level Indicator

Other (Describe: \_\_\_\_\_)

## 2. Purge Method

Pump, (Type: \_\_\_\_\_)

X Bailer (Size: 3')

3. Volume Removed: (Refer to Bailing Tables)

X	Full Bailers:	Required	32	Actual	32
---	---------------	----------	----	--------	----

Well Purged Dry

Gallons, if pumped

4. ~~X~~ Condition of Water during Evacuation

Oil Droplets                      Suspended Sediment

Oil Phases	<del>X</del> Clear
------------	--------------------

           Muddy            Chemical Odor

Other

5. X All equipment decontaminated in accordance with current sampling and analysis plan.

C. SAMPLE EXTRACTION:

1. Type Sample: X Grab \_\_\_\_\_ Composite
2. Method of Extraction: Teflon Bailer
3. X Condition of Water During Extraction
 

<u>      </u> Oil Droplets	<u>      </u> Suspended Sediment
<u>      </u> Oil Phases	<u>X</u> Clear
<u>      </u> Muddy	<u>      </u> Chemical Odor
<u>      </u> Other _____	

D. ON-SITE MEASUREMENTS

	<u>First Bailer</u>				<u>Last Bailer</u>	
Temperature	<u>19.0</u>				<u>19.1</u>	
pH	<u>5.2</u>	<u>5.15</u>	<u>5.2</u>	<u>5.15</u>	<u>5.2</u>	<u>5.05</u>
Conductivity	<u>52</u>	<u>51</u>	<u>51</u>	<u>53</u>	<u>50</u>	<u>50</u>

E. SAMPLE CONTAINERS

<u>Sample Number</u>	<u>Container</u>	<u>Parameter(s)</u>	<u>Preservation</u>	
			<u>None</u>	<u>Added</u> <u>By Lab</u>
<u>900404-4D</u>	40 ml glass vial		<u>      </u>	<u>      </u>
	1 liter amber glass	PLP, ACENAPHTHYLENE FLUORANTHENE, NAPHTHALENE	<u>      </u>	<u>      </u>
	1 gal amber glass		<u>      </u>	<u>      </u>
	250 ml plastic		<u>      </u>	<u>      </u>
	250 ml plastic		<u>      </u>	<u>      </u>
	1/2 gal plastic		<u>      </u>	<u>      </u>
	Other (Describe) _____		<u>      </u>	<u>      </u>

F. ON-SITE SAMPLE FILTRATION

X None: \_\_\_\_\_ On-Site (Describe Method & Containers) \_\_\_\_\_

G. CONTAINER HANDLING:

- X Container Sides Labeled
- X Containers Placed in Ice Chest
- X Chain-of-Custody documentation completed.

H. X All Equipment Decontaminated in accordance with current sampling and analysis plan.

I. OTHER COMMENTS: No \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_

J. SAMPLER'S SIGNATURE Bill Harris DATE: 4-4-90  
 Monitor Well No. 4D

THOMASON LUMBER AND TIMBER CO.  
BROKEN BOW, OKLAHOMA  
GROUNDWATER SAMPLING RECORD

MONITORING WELL NO. 5A  
DATE AND TIME OF SAMPLING: 4-3-90, 19   1645 HOURS  
SAMPLE COLLECTED BY: BEH, PWB, LRB OF B & F ENGINEERING, INC.  
WEATHER: Sunny + Hot  
SAMPLING LOCATION MOWO SAMPLING PERIOD:            QUARTER 19  

A. MONITOR WELL CONDITION:

☒ Locked ☐ Unlocked  
Well Number (IS) - IS NOT) Apparent  
Steel Casing Condition is: OK  
Inner PVC Casing Condition is: OK  
Depth Measurement Datum (IS) - IS NOT) Apparent  
Datum for Depth Measurements: ☒ High point on top of PVC casing; ☐ Other             
Total Depth of Well: Actual 88.48 (ft.): Installed            (ft)  
☒ Deficiencies Corrected by Sample Collector  
☒ Repairs Required (Describe): None

B. WELL EVACUATION:

1. Water Depth 33.64 Ft. below datum  
Measured With: ☒ Water Level Indicator  
☐ Other (Describe:           )
2. Purge Method  
☐ Pump, (Type:           )  
☒ Bailer (Size: 3)
3. Volume Removed: (Refer to Bailing Tables)  
☒ Full Bailers: Required            Actual             
☐ Well Purged Dry  
☐ Gallons, if pumped
4. ☒ Condition of Water during Evacuation  

<input type="checkbox"/> Oil Droplets	<input type="checkbox"/> Suspended Sediment
<input type="checkbox"/> Oil Phases	<input checked="" type="checkbox"/> Clear
<input type="checkbox"/> Muddy	<input type="checkbox"/> Chemical Odor
<input type="checkbox"/> Other <u>          </u>	
5. ☒ All equipment decontaminated in accordance with current sampling and analysis plan.

C. SAMPLE EXTRACTION:

1. Type Sample: X Grab                      Composite  
2. Method of Extraction: Teflon Bailer  
3. X Condition of Water During Extraction  
               Oil Droplets            Suspended Sediment  
               Oil Phases            X Clear  
               Muddy            Chemical Odor  
               Other

#### D. ON-SITE MEASUREMENTS

	<u>First Bailer</u>				<u>Last Bailer</u>	
Temperature	<u>18.4</u>				<u>17.7</u>	
pH	<u>6.8</u>	<u>6.6</u>	<u>6.5</u>	<u>6.4</u>	<u>6.4</u>	<u>6.5</u>
Conductivity	<u>222</u>	<u>221</u>	<u>220</u>	<u>221</u>	<u>235</u>	<u>231</u>

### E. SAMPLE CONTAINERS

<u>Sample Number</u>	<u>Container</u>	<u>Parameter(s)</u>	<u>Preservation</u>	
			<u>None</u>	<u>Added</u> <u>By Lab</u>
	40 ml glass vial			
	1 liter amber glass			
900403-5A	1 gal amber glass	PCP, ACENAPHTHYLENE FLUORANTHENE, NAPHTHALENE		
	250 ml plastic			
	250 ml plastic			
	1/2 gal plastic			
	Other (Describe)			

## F. ON-SITE SAMPLE FILTRATION

✓ None: On-Site (Describe Method & Containers) \_\_\_\_\_

G. CONTAINER HANDLING:

- ☒ Container Sides Labeled
- ☒ Containers Placed in Ice Chest
- ☒ Chain-of-Custody documentation completed.

H. X All Equipment Decontaminated in accordance with current sampling and analysis plan.

I. OTHER COMMENTS: NO

J. SAMPLER'S SIGNATURE Bill Harris DATE: 4-3-90  
Monitor Well No. 5A

THOMASON LUMBER AND TIMBER CO.  
BROKEN BOW, OKLAHOMA  
GROUNDWATER SAMPLING RECORD

MONITORING WELL NO. 5C  
DATE AND TIME OF SAMPLING: 4-4-90, 191000 HOURS  
SAMPLE COLLECTED BY: BEA, FOC, PWB, LRB OF B & F ENGINEERING, INC.  
WEATHER: Sunny & HOT  
SAMPLING LOCATION Melroe SAMPLING PERIOD: QUARTER 19

A. MONITOR WELL CONDITION:

X Locked \_\_\_\_\_ Unlocked \_\_\_\_\_  
Well Number (IS) - IS NOT) Apparent  
Steel Casing Condition is: OK  
Inner PVC Casing Condition is: OK  
Depth Measurement Datum (IS) - IS NOT) Apparent  
Datum for Depth Measurements: X High point on top of PVC  
casing; \_\_\_\_\_ Other \_\_\_\_\_  
Total Depth of Well: Actual 64.81 (ft.): Installed \_\_\_\_\_ (ft.)  
X Deficiencies Corrected by Sample Collector  
X Repairs Required (Describe): NONE

B. WELL EVACUATION:

1. Water Depth 30.28 Ft. below datum  
Measured With: X Water Level Indicator  
         Other (Describe: \_\_\_\_\_)
2. Purge Method  
         Pump, (Type: \_\_\_\_\_)  
X Bailer (Size: 3')
3. Volume Removed: (Refer to Bailing Tables)  
X Full Bailers: Required 69 Actual 32  
X Well Purged Dry  
         Gallons, if pumped
4. X Condition of Water during Evacuation  
         Oil Droplets          Suspended Sediment  
         Oil Phases X Clear  
         Muddy          Chemical Odor  
         Other \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_
5. X All equipment decontaminated in accordance with current sampling and analysis plan.

C. SAMPLE EXTRACTION:

1. Type Sample: X Grab \_\_\_\_\_ Composite
2. Method of Extraction: Teflon Bailer
3. X Condition of Water During Extraction
 

<u>  </u> Oil Droplets	<u>X</u> Suspended Sediment
<u>  </u> Oil Phases	<u><del>  </del></u> Clear
<u>  </u> Muddy	<u>  </u> Chemical Odor
<u>  </u> Other _____	

D. ON-SITE MEASUREMENTS

	<u>First Bailer</u>				<u>Last Bailer</u>	
Temperature	<u>17.1</u>				<u>18.0</u>	
pH	<u>5.5</u>	<u>5.6</u>	<u>5.6</u>	<u>5.5</u>	<u>5.4</u>	<u>5.4</u>
Conductivity	<u>33</u>	<u>59</u>	<u>36</u>	<u>48</u>	<u>35</u>	<u>35</u>

E. SAMPLE CONTAINERS

<u>Sample Number</u>	<u>Container</u>	<u>Parameter(s)</u>	<u>Preservation</u>	
			<u>None</u>	<u>Added</u>
				<u>By Lab</u>
	40 ml glass vial		<u>  </u>	<u>  </u>
<u>900404-5C</u>	1 liter amber glass	<u>PCP, ACENAPHTHYLENE, FLUORANTHENE, NAPHTHALENE</u>	<u>  </u>	<u>  </u>
	1 gal amber glass		<u>  </u>	<u>  </u>
	250 ml plastic		<u>  </u>	<u>  </u>
	250 ml plastic		<u>  </u>	<u>  </u>
	1/2 gal plastic		<u>  </u>	<u>  </u>
	Other (Describe) _____		<u>  </u>	<u>  </u>

F. ON-SITE SAMPLE FILTRATION

      None: \_\_\_\_\_ On-Site (Describe Method & Containers) \_\_\_\_\_

G. CONTAINER HANDLING:

- Container Sides Labeled
- Containers Placed in Ice Chest
- Chain-of-Custody documentation completed.

H.    All Equipment Decontaminated in accordance with current sampling and analysis plan.

I. OTHER COMMENTS: No

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

J. SAMPLER'S SIGNATURE Bill Harris DATE: 4-4-90

Monitor Well No. 5C



# GROUNDWATER SAMPLING RECORD

MONITORING WELL NO. 5D

DATE AND TIME OF SAMPLING: 4-4-96, 191020 HOURS

SAMPLE COLLECTED BY: FOC, BEH, LRB, PWB OF B & F ENGINEERING, INC.

WEATHER: Sunny & Hot

SAMPLING LOCATION Mojo SAMPLING PERIOD: \_\_\_\_\_ QUARTER 19 \_\_\_\_\_

A. MONITOR WELL CONDITION:

☒ Locked      ☐ Unlocked

Well Number (IS) - IS NOT) Apparent

Steel Casing Condition is: OK

Inner PVC Casing Condition is: OK

Depth Measurement Datum (IS) - IS NOT) Apparent

Datum for Depth Measurements: X High point on top of PVC casing; Other \_\_\_\_\_

Total Depth of Well: Actual 52.58 (ft.): Installed \_\_\_\_\_ (ft)

X Deficiencies Corrected by Sample Collector

X Repairs Required (Describe): NONE

B. WELL EVACUATION:

1. Water Depth 27.42 Ft. below datum

Measured With: ☒ Water Level Indicator

Other (Describe: \_\_\_\_\_)

## 2. Purge Method

Pump, (Type: \_\_\_\_\_)

X Bailer (Size: 3')

3. Volume Removed: (Refer to Bailing Tables)

X Full Bailers: Required 50 Actual ~~50~~ 27

X Well Purged Dry

Gallons, if pumped

4. ~~X~~ Condition of Water during Evacuation

Oil Droplets	Suspended Sediment
	

Oil Phases	X Clear
------------	---------

           Muddy            Chemical Odor

Other

5. X All equipment decontaminated in accordance with current sampling and analysis plan.

C. SAMPLE EXTRACTION:

1. Type Sample: X Grab \_\_\_\_\_ Composite
2. Method of Extraction: Teflon Bailer
3. X Condition of Water During Extraction
 

_____ Oil Droplets	_____ Suspended Sediment
_____ Oil Phases	<u>X</u> Clear
_____ Muddy	_____ Chemical Odor
_____ Other _____	

D. ON-SITE MEASUREMENTS

	<u>First Bailer</u>				<u>Last Bailer</u>	
Temperature °C	<u>16.9</u>				<u>18.0</u>	
pH	<u>5.2</u>	<u>5.3</u>	<u>5.25</u>	<u>5.25</u>	<u>5.1</u>	<u>5.15</u>
Conductivity	<u>79</u>	<u>78</u>	<u>78</u>	<u>78</u>	<u>75</u>	<u>76</u>

E. SAMPLE CONTAINERS

<u>Sample Number</u>	<u>Container</u>	<u>Parameter(s)</u>	<u>Preservation</u>	
			<u>None</u>	<u>Added</u> <u>By Lab</u>
	40 ml glass vial			
<u>900404-5D</u>	1 liter amber glass	PCP, ACENAPHTHYLENE FLUORANTHENE, NAPHTHALENE ✓		
	1 gal amber glass			
	250 ml plastic			
	250 ml plastic			
	1/2 gal plastic			
	Other (Describe)			

F. ON-SITE SAMPLE FILTRATION

X None: \_\_\_\_\_ On-Site (Describe Method & Containers) \_\_\_\_\_

G. CONTAINER HANDLING:

- X Container Sides Labeled
- X Containers Placed in Ice Chest
- X Chain-of-Custody documentation completed.

H. X All Equipment Decontaminated in accordance with current sampling and analysis plan.

I. OTHER COMMENTS: No

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

J. SAMPLER'S SIGNATURE Bill Harris DATE: 4-4-90

Monitor Well No. 5D

THOMASON LUMBER AND TIMBER CO.  
BROKEN BOW, OKLAHOMA  
GROUNDWATER SAMPLING RECORD

MONITORING WELL NO. 6A  
DATE AND TIME OF SAMPLING: 4-3-90, 19   1700 HOURS  
SAMPLE COLLECTED BY: PWB, REH, IRR OF B & F ENGINEERING, INC.  
WEATHER: SUNNY & HOT  
SAMPLING LOCATION MOWO SAMPLING PERIOD:            QUARTER 19  

A. MONITOR WELL CONDITION:

☒ Locked ☐ Unlocked  
Well Number (IS) - IS NOT) Apparent  
Steel Casing Condition is: OK  
Inner PVC Casing Condition is: OK  
Depth Measurement Datum (IS) - IS NOT) Apparent  
Datum for Depth Measurements: ☒ High point on top of PVC casing;            Other             
Total Depth of Well: Actual 47.47 (ft.): Installed            (ft)  
☒ Deficiencies Corrected by Sample Collector  
☒ Repairs Required (Describe): None

B. WELL EVACUATION:

1. Water Depth 13.39 Ft. below datum  
Measured With: ☒ Water Level Indicator  
           Other (Describe:           )
2. Purge Method  
           Pump, (Type:           )  
☒ Bailer (Size: 3')
3. Volume Removed: (Refer to Bailing Tables)  
☒ Full Bailers: Required 67 Actual 67  
           Well Purged Dry  
           Gallons, if pumped
4. ☒ Condition of Water during Evacuation  

<u>          </u> Oil Droplets	<input checked="" type="checkbox"/> Suspended Sediment
<u>          </u> Oil Phases	<u>          </u> Clear
<u>          </u> Muddy	<u>          </u> Chemical Odor
<u>          </u> Other <u>          </u>	
5. ☒ All equipment decontaminated in accordance with current sampling and analysis plan.

C. SAMPLE EXTRACTION:

1. Type Sample: X Grab                      Composite
2. Method of Extraction: Teflon Bailer
3. X Condition of Water During Extraction
- |                                |                                 |
|--------------------------------|---------------------------------|
| <u>          </u> Oil Droplets | <u>X</u> Suspended Sediment     |
| <u>          </u> Oil Phases   | <u>          </u> Clear         |
| <u>          </u> Muddy        | <u>          </u> Chemical Odor |
| <u>          </u> Other        |                                 |

#### D. ON-SITE MEASUREMENTS

	<u>First Bailer</u>				<u>Last Bailer</u>	
Temperature	<u>17.8</u>				<u>17.1</u>	
pH	<u>5.9</u>	<u>6.0</u>	<u>5.9</u>	<u>5.8</u>	<u>5.4</u>	<u>5.2</u>
Conductivity	<u>63</u>	<u>63</u>	<u>62</u>	<u>62</u>	<u>61</u>	<u>61</u>

### E. SAMPLE CONTAINERS

Sample Number	Container	Parameter(s)	Preservation		By Lab
			None	Added	
900403-6A	<del>40-ml glass vial</del>	<del>PCP, ACENAPHTHYLENE</del> FLUORANTHENE, NAPHTHALENE	✓		
<del>1</del> - <del>60-1</del>	1 liter amber glass		✓		
<del>1</del> - <del>60-2</del>	1-gal amber glass		✓		
<del>1</del> - <del>60-3</del>	250-ml plastic		✓		
<del>1</del> - <del>60-4</del>	250-ml plastic		✓		
	1/2 gal plastic				
	Other (Describe)				

## F. ON-SITE SAMPLE FILTRATION

✓ None: \_\_\_\_\_ On-Site (Describe Method & Containers) \_\_\_\_\_

G. CONTAINER HANDLING:

- X Container Sides Labeled  
X Containers Placed in Ice Chest  
X Chain-of-Custody documentation completed.

H. X All Equipment Decontaminated in accordance with current sampling and analysis plan.

1. OTHER COMMENTS: NO

J. SAMPLER'S SIGNATURE Bill Harris DATE: 4-3-90  
Monitor Well No. 6A

# GROUNDWATER SAMPLING RECORD

MONITORING WELL NO. 6C  
DATE AND TIME OF SAMPLING: 4-3-90, 1977 1710 HOURS  
SAMPLE COLLECTED BY: BEH, LRB, PWB OF B & F ENGINEERING, INC.  
WEATHER: SUNNY & HOT  
SAMPLING LOCATION Mona SAMPLING PERIOD: \_\_\_\_\_ QUARTER 19\_\_\_\_

A. MONITOR WELL CONDITION:

X Locked      Unlocked

Well Number (IS) - IS NOT) Apparent

Steel Casing Condition is: OK

Inner PVC Casing Condition is: OK

Depth Measurement Datum (IS - IS NOT) Apparent

Datum for Depth Measurements: Y High point on top of PVC casing; Other \_\_\_\_\_

Total Depth of Well: Actual 28.85 (ft.): Installed \_\_\_\_\_ (ft)

X Deficiencies Corrected by Sample Collector

Y Repairs Required (Describe): *None*

B. WELL EVACUATION:

1. Water Depth 12.22 Ft. below datum

Measured With: Water Level Indicator

Other (Describe: \_\_\_\_\_

## 2. Purge Method

\_\_\_\_\_ Pump, (Type: \_\_\_\_\_)

X Bailer (Size: 3' )

3. Volume Removed: (Refer to Bailing Tables)

X Full Bailers: Required 33 Actual 34

           Well Purged Dry

           Gallons, if pumped

4. X Condition of Water during Evacuation

Oil Droplets                      Suspended Sediment

Oil Phases	Clear
1	
2	
3	
4	
5	
6	
7	
8	
9	
10	
11	
12	
13	
14	
15	
16	
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97	
98	
99	
100	

— Muddy X Chemical Odor slight

Other

5. X All equipment decontaminated in accordance with current sampling and analysis plan.

C. SAMPLE EXTRACTION:

1. Type Sample: Y Grab \_\_\_\_\_ Composite
2. Method of Extraction: Teflon Bailer
3. X Condition of Water During Extraction
 

<u>      </u> Oil Droplets	<u>      </u> Suspended Sediment
<u>      </u> Oil Phases	<u>X</u> Clear
<u>      </u> Muddy	<u>      </u> Chemical Odor
<u>      </u> Other _____	

D. ON-SITE MEASUREMENTS

	<u>First Bailer</u>				<u>Last Bailer</u>	
Temperature	<u>16.9</u>	<u>      </u>	<u>      </u>	<u>      </u>	<u>16.6</u>	<u>      </u>
pH	<u>5.1</u>	<u>5.2</u>	<u>5.0</u>	<u>5.2</u>	<u>5.4</u>	<u>5.3</u>
Conductivity	<u>102</u>	<u>100</u>	<u>104</u>	<u>103</u>	<u>109</u>	<u>107</u>

E. SAMPLE CONTAINERS

<u>Sample Number</u>	<u>Container</u>	<u>Parameter(s)</u>	<u>Preservation</u>	
			<u>None</u>	<u>Added</u>
				<u>By Lab</u>
	<i>All Amber Glass</i>			
	40 ml glass vial		<u>✓</u>	
<u>900403-6C</u>	1 liter amber glass	PCP, ACENAPHTHYLENE FLUORANTHENE, NAPHTHALENE	<u>✓</u>	
<u>-6C-1</u>	1 gal amber glass	"	<u>✓</u>	
<u>-6C-2</u>	250 ml plastic	"	<u>✓</u>	
<u>-6C-3</u>	250 ml plastic	"	<u>✓</u>	
<u>-6C-4</u>	1/2 gal plastic	"	<u>✓</u>	
	Other (Describe)			

F. ON-SITE SAMPLE FILTRATION

X None: \_\_\_\_\_ On-Site (Describe Method & Containers) \_\_\_\_\_

G. CONTAINER HANDLING:

- X Container Sides Labeled
- X Containers Placed in Ice Chest
- ✓ Chain-of-Custody documentation completed.

H. X All Equipment Decontaminated in accordance with current sampling and analysis plan.

I. OTHER COMMENTS: NO

J. SAMPLER'S SIGNATURE

Bill Harris

DATE: 4-3-90

Monitor Well No. 6C

THOMASON LUMBER AND TIMBER CO.  
BROKEN BOW, OKLAHOMA  
GROUNDWATER SAMPLING RECORD

~~MONITORING WELL NO.~~ **FIREHOUSE**

DATE AND TIME OF SAMPLING: \_\_\_\_\_, 19\_\_\_\_ HOURS

SAMPLE COLLECTED BY: \_\_\_\_\_ OF B & F ENGINEERING, INC.

WEATHER: \_\_\_\_\_

SAMPLING LOCATION **FIREHOUSE** SAMPLING PERIOD: \_\_\_\_\_ QUARTER 19\_\_\_\_

A. MONITOR WELL CONDITION:

\_\_\_\_ Locked \_\_\_\_ Unlocked

Well Number (IS - IS NOT) Apparent

Steel Casing Condition is: \_\_\_\_\_

Inner PVC Casing Condition is: \_\_\_\_\_

Depth Measurement Datum (IS - IS NOT) Apparent

Datum for Depth Measurements: \_\_\_\_\_ High point on top of PVC casing; \_\_\_\_\_ Other \_\_\_\_\_

Total Depth of Well: Actual \_\_\_\_\_ (ft.): Installed \_\_\_\_\_ (ft)

Deficiencies Corrected by Sample Collector

Repairs Required (Describe): \_\_\_\_\_

B. WELL EVACUATION:

Water Depth \_\_\_\_\_ Ft. below datum

Measured With: \_\_\_\_\_ Water Level Indicator

Other (Describe: \_\_\_\_\_)

2. Purge Method

\_\_\_\_ Pump, (Type: \_\_\_\_\_)

\_\_\_\_ Bailer (Size: \_\_\_\_\_)

3. Volume Removed: (Refer to Bailing Tables)

Full Bailers: Required \_\_\_\_\_ Actual \_\_\_\_\_

Well Purged Dry

Gallons, if pumped

4. Condition of Water during Evacuation

\_\_\_\_ Oil Droplets \_\_\_\_ Suspended Sediment

\_\_\_\_ Oil Phases \_\_\_\_ Clear

\_\_\_\_ Muddy \_\_\_\_ Chemical Odor

\_\_\_\_ Other \_\_\_\_\_

5. All equipment decontaminated in accordance with current sampling and analysis plan.

C. SAMPLE EXTRACTION:

1. Type Sample: X Grab        Composite

2. Method of Extraction: ~~Teflon Bailer~~ FIRE HOSE

3. X Condition of Water During Extraction

       Oil Droplets        Suspended Sediment  
       Oil Phases X Clear  
       Muddy        Chemical Odor  
       Other       

D. ON-SITE MEASUREMENTS

	<u>First Bailer</u>				<u>Last Bailer</u>	
Temperature	<u>17.0</u>					
pH	<u>9.5</u>	<u>9.4</u>	<u>9.5</u>	<u>9.5</u>		
Conductivity	<u>90</u>	<u>90</u>	<u>90</u>	<u>90</u>		

E. SAMPLE CONTAINERS

<u>Sample Number</u>	<u>Container</u>	<u>Parameter(s)</u>	<u>Preservation</u>	
			<u>None</u>	<u>Added</u> <u>By Lab</u>
<u>      </u>	40 ml glass vial	<u>      </u>	<u>      </u>	<u>      </u>
<u>900404-FH</u>	1 liter amber glass	<u>      </u>	<u>      </u>	<u>      </u>
<u>      </u>	1 gal amber glass	<u>      </u>	<u>      </u>	<u>      </u>
<u>      </u>	250 ml plastic	<u>      </u>	<u>      </u>	<u>      </u>
<u>      </u>	250 ml plastic	<u>      </u>	<u>      </u>	<u>      </u>
<u>      </u>	1/2 gal plastic	<u>      </u>	<u>      </u>	<u>      </u>
<u>      </u>	Other (Describe)	<u>      </u>	<u>      </u>	<u>      </u>

F. ON-SITE SAMPLE FILTRATION

       None:        On-Site (Describe Method & Containers)       

G. CONTAINER HANDLING:

       Container Sides Labeled  
       Containers Placed in Ice Chest  
       Chain-of-Custody documentation completed.

N/A All Equipment Decontaminated in accordance with current sampling and analysis plan.

I. OTHER COMMENTS: No

J. SAMPLER'S SIGNATURE

Monitor Well No.       

Bill Harris

DATE: 4-4-90



**APPENDIX G**

**PROPOSED GROUND-WATER MONITORING NETWORK**

## APPENDIX G

### Ground-Water Monitoring Network Plan

#### 1.0 General

The following discussion of the monitoring well network will reference the existing piezometers and their current designations. The new designations reflecting their administrative change from piezometers to monitoring wells will be presented at the end of this section.

#### 2.0 Monitoring Well Locations

Ground-water flow patterns as well as geologic and topographic conditions at the site limit potential upgradient well locations to that portion of the facility which is west of the 5200 foot Easting coordinate line, and south of the ground-water divide as depicted in Drawings 6 - 11. The wells located at P-1 currently serve as the upgradient well nest for the monitoring well network.

Nested wells have also been located downgradient of the following units: the resource recovery area, kickback drippage area, and the hazardous waste management units. Downgradient nested well locations are P-2, P-4, P-5, and P-6.

### 3.0 Aquifer Intervals

Well completion intervals were originally targeted to investigate the first two significant saturated sand units in the uppermost aquifer at the site, as well as the sand unit below what had been defined in the PSI (1988) as the base of the uppermost aquifer. However, not all completion intervals selected during the well installation phase correlated with the original targeted intervals. The sand interval(s) in which each well was completed may be determined from the geologic cross sections presented as Drawing 5. Table G.1 presents the monitoring well designation, interval(s) in which a well was completed, and existing piezometer name of each well in the proposed monitoring well network. Drawing 12 illustrates the locations of each monitoring well in the proposed ground-water monitoring network.

TABLE G.1

Monitoring Well, Sand Interval, and Piezometer Name Correlation

<u>Monitor Well</u>	<u>Sand Interval</u>	<u>Piezometer</u>	<u>Monitor Well</u>	<u>Sand Interval</u>	<u>Piezometer</u>
MW-1D	Du - Dm	P-1D	MW-5D	Du - Dm	P-5D
MW-1CD	Dl - Cu	P-1C	MW-5C	Cu - Cl	P-5C
MW-1A	A	P-1A	MW-5A	A	P-5A
MW-2E	E	P-2D	MW-6C	Cl	P-6C
MW-2D	Du - Dm	P-2C	MW-6A	A	P-6A
MW-2A	A	P-2A			
MW-4G	G1	P-4D			
MW-4D	Du	P-4C			
MW-4A	A	P-4A			

OKD007335524  
III

GROUND-WATER SAMPLING AND ANALYSIS PLAN

FOR

MONITORING WELLS  
AT THE

THOMASON LUMBER AND TIMBER COMPANY  
WOOD TREATMENT PLANT  
BROKEN BOW, OKLAHOMA

B&F PROJECT NO.  
7-2397-0101



ENGINEERING, INC.

928 Airport Road • Hot Springs National Park, Arkansas 71913  
(501) 767-2366

OKD 007335524

III

GROUND-WATER SAMPLING AND ANALYSIS PLAN

FOR

MONITORING WELLS

AT THE

THOMASON LUMBER AND TIMBER COMPANY

WOOD TREATMENT PLANT

BROKEN BOW, OKLAHOMA

B&F PROJECT NO.

7-2397-0101

PREPARED FOR:

THOMASON LUMBER AND TIMBER COMPANY

P.O. DRAWER 278

BROKEN BOW, OKLAHOMA 74738

PREPARED BY:

B&F ENGINEERING, INC.

928 AIRPORT ROAD

HOT SPRINGS, ARKANSAS 71913

FEBRUARY 23, 1990

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Figure 1.1 Location of Monitoring Wells

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Table 10.1 1989 Parameters for Ground-Water Monitoring

## GROUND-WATER SAMPLING AND ANALYSIS PLAN

### 1.0 Introduction

The Thomason Lumber and Timber Company (Thomason), Broken Bow, Oklahoma, wood treatment plant has used both Creosote and Pentachlorophenol (PCP) as preservative agents during its period of operation. The presence of these compounds may be determined either by direct analysis, or through the use of indicator compounds. The wood preservative PCP may be detected in ground water by direct chemical analysis. Creosote, which is actually a mixture of a large number of organic compounds in relatively low percentages is detected in ground water by analyses for indicators.

Bart (E. F. Bart, "The Chemistry of Creosote", Creosote Technical and Environmental Seminar, undated) has performed a detailed evaluation of the chemistry of creosote. A copy of that report was presented as Appendix B of the Process Area Sampling and Analysis Plan, Thomason Lumber and Timber Company, Broken Bow Wood Treating Plant, February 4, 1987. Bart identified creosote as a chemical mixture of as many as 200 compounds. Based on the work by Bart and data from the Handbook of Chemistry and Physics



Thomason proposes to analyze ground-water samples for PCP as well as the following Creosote indicators:

- Acenaphthylene
- Napthalene
- Fluoranthene

## 2.0 Monitoring Well Development

Wells to be used for water-quality evaluation will be developed by hand bailing until the water is clear and free of sediment as determined by the site hydrogeologist. Water removed from the wells will be discharged into DOT approved drums placed beside each well. As necessary, water will be transferred from each well drum to the Separator/Evaporator, where the water will be disposed. Dedicated Teflon bailers will be used to bail the wells. Each bailer will be decontaminated prior to, and after each use according to the procedures given in Section 6.1. Monitoring well locations are illustrated in Figure 1.

## 3.0 Maintenance and Security

Each time samples are collected, the sampler will inspect the well, note anomalous measurements and examine the collected sample for evidence of well failure. Such evidence will include, but not be limited to:

- cracks in the well pad,
- obvious elevation changes in the top of the well casing,
- anomalous water level readings,

- unusual water discoloration,
- excessive sediment.

The general condition of the well shall be noted on the Ground - water Sampling Record form as provided in Appendix A. Excessive sedimentation will be assessed by measuring the depth to the bottom of the well and by comparing that measurement to the installed depth.

All wells are provided with protective steel security casing and locks. Samplers will check each lock for evidence of tampering prior to collecting the sample and will lock each well after the sample is collected.

#### 4.0 Ground-Water Level Measurements

Measurements for all monitoring and/or observation wells for which integrity has been assured will be made within a very short time interval (24 hours or less), to avoid collecting apparently anomalous water-level data due to natural variability. Water levels will be measured prior to the purging of wells to be sampled. Water-level measurements will be made to the nearest 0.01 feet. Data from these measurements will be utilized to construct potentiometric surface contour maps in order to monitor ground-water flow patterns and rates.

##### 4.1 Measurement Technique

An electric wire line will be used to measure the air/water interface within a monitoring well. After removing the locking and protective caps from each well, the sampler will lower the

wireline into the well. The depth at which the water surface is encountered will be measured from the top of the casing. The probe will then be lowered to the bottom of the well. This procedure will allow a determination of the depth to water, and the total depth of the well. Water-level and total-depth measurements will be recorded on the standardized form in Appendix B as well as in the Ground-water Sampling Record.

#### 4.2 Decontamination

The equipment used to obtain water-level measurements will be placed in a plastic bag after each use, and transported to the decontamination site where it will be cleaned according to procedures described in Section 6.1 with the exception of the solvent rinse. No solvent rinse will be used due to its detrimental effects to the wireline.

### 5.0 Ground-water Sampling Procedures

#### 5.1 Well Evacuation Procedures

Prior to evacuating each well, a clean plastic drop cloth will be placed around the well to prevent surface soils from coming into contact with the purging equipment. The cloth will remain in place during the entire sampling period. A new cloth will be placed around the well whenever necessary to in order to assure that contamination from surface soils is minimized.

Before collecting any ground-water samples, each well will be purged. This procedure will be followed to provide adequate

assurance that the samples collected are representative of ground-water in the interval being monitored. Where feasible, three casing volumes will be removed from each monitoring well prior to sampling. In cases where full recovery exceeds three hours, a sample will be collected as soon as sufficient volume is available after purging the well dry.

Purging equipment will consist of dedicated teflon bailers. Each bailer will be thoroughly decontaminated both prior to, and after each use. Decontamination procedures are discussed in Section 6.1.

The purged water will be discharged to dedicated containers located at each well site. Containers will be capped when not in use. Prior to purging each well the containers to receive discharge waters will be inspected to assure that leakage during holding time will not occur. After each sampling period, water will be transferred from the containers around the wells to the water treatment system located at the site.

## 5.2 Sample Collection

### 5.2.1 Sampling Records

In order to provide complete documentation of the on-site aspects of the sampling episode, detailed sampling records for each well will be prepared. These records will include the information listed below:

- sample location (facility name and monitoring well number),

- date and time of sampling,
- sample description (type and volume)
- sample observation (appearance, odor, other comments),
- sampling method,
- well evacuation method and water volume evacuated,
- field observations and measurements (if applicable),
- sample preservation techniques,
- depth to water level,
- weather conditions,
- sample collector,
- any other pertinent information.

A copy of the Ground-water Sampling Record form is contained in Appendix A.

#### 5.2.2 Preventing Contamination of Samples

The following procedures will be used in order to prevent the contamination of samples. A clean pair of new, disposable gloves will be worn each time a sample is collected. Only new or decontaminated sampling equipment will be used for purging and sample collection. One member of the sampling team will take all notes, complete sample labels, etc., while other team members collect the sample. After collection, samples will not be handled more than is necessary.

#### 5.2.3 Sampling Order

Sampling will proceed from monitoring wells with the likelihood of least contamination, if any, to those with the likelihood of

most contamination. The determination of most and least contaminated will be made by the Project Hydrogeologist based on proximity to potential sources and sampling data from the previous sampling period.

#### 5.2.4 Sample Extraction

A dedicated bailer will be used for sample extraction. Each bailer will be decontaminated both prior to, and after use as discussed in Section 6.1. Care will be taken during insertion of sampling equipment to prevent undue disturbance of water in the well. Water will be extracted from the well and discharged to a clean sample container provided by the receiving laboratory.

#### 5.2.5 In-Situ Measurements

Measurements taken at the sampling site will include measurements of pH, temperature and specific conductance of unpreserved samples at the monitoring well site. The measurements will be made in clean glass or plastic containers separate from those intended for transport of samples to the laboratory. After each measurement, the water will be placed in containers located at each well site, the contents of which will be disposed of in accordance with State and Federal regulations. The instrument probes will be decontaminated between measurements in accordance with the procedures in Section 6.1 in order to eliminate cross contamination.

Instrumentation used for in-situ measurements will be calibrated as discussed below. The following specific calibration procedures apply:

(1) pH meters will be calibrated prior to the first sample measurement of each sampling day and again after the final sampling event of the day. The "two point" calibration method will be used with aliquots of standard pH solutions 7.0 and 4.0 that are traceable to primary standards of the National Bureau of Standards (NBS). These standard solutions will be used as QC check samples following every two to three measurements to verify calibration. If pH drifts more than 0.2 pH units, the meter will be recalibrated and noted on field sheets.

(2) Conductivity meter calibration will be checked prior to the first sample measurement of each sample day and again after the final sample measurement of the day using an NBS traceable standard solution of potassium chloride.

(3) Calibration of temperature thermistors will be checked prior to the first sample measurement of each day and again after the final sample of each day using an NBS traceable thermometer.

Records of field calibrations for these instruments will be maintained on the standard form provided in Appendix C. These records will include:

- calibration date
- person calibrating instrument
- standards used
- problems, if any, with the calibration procedures.

## 6.0 Decontamination Procedures

### 6.1 Bailers

After each use, the bailers will be individually placed into clean plastic bags and taken to the specified decontamination facility for decontamination. The line used to lower the bailer into the well will be discarded in accordance with Federal and State Regulations. Each bailer will be disassembled and all parts will be washed as follows:

- a. Clean with a laboratory grade detergent such as (ALCONOX). One brush will be dedicated to each bailer for this purpose.
- b. Rinse with tap water.
- c. Rinse with solvent (acetone or hexane) (Bailers only).
- d. Rinse with distilled water.
- e. Hand dry with clean paper towels and place in clean plastic bags.
- f. Store in dedicated PVC or plastic bailer cases until next use.

Records of decontamination will be maintained on the standardized form provided in Appendix D. The effectiveness of decontamination procedures will be verified by means of selected equipment blanks on the bailers. Each bailer will be stored in an individual bailer case and stored at a secure location.



## 6.2 Probes

Decontamination of the electric wireline and any other probe to be placed either in wells or in contact with samples will follow the procedures discussed in Section 6.1. The effectiveness of decontamination procedures will be verified by means of equipment blanks on the probe.

## 7.0 Field Quality Control

The following sections provide information on the Quality Assurance/Quality Control (QA/QC) to be utilized in the ground-water sampling and analysis program.

### 7.1 Sample Identification

Samples collected from wells will be identified by well numbers. Arbitrary numbers will be assigned to blank, duplicate and split samples.

### 7.2 Analytical Quality Control

Trip blanks, equipment blanks and field blanks will be included in sampling and analytical laboratory analyses as a quality control operation. These procedures will be performed at least once with each analytical batch or as otherwise stated below.

TRIP BLANKS -- Cleanliness of sample bottles will be verified by the use of trip blanks. One of each type of sample bottle per analytical batch or a minimum of one of each type of sample bottle per twenty (20) sample bottles will be filled with Type II water at the receiving laboratory, transported to the site,

handled like a sample, and returned to the laboratory for analysis.

EQUIPMENT BLANK -- In order to verify that sampling equipment has been effectively decontaminated, bailers will be rinsed with a with Type II (dionized) water. The contents of the blank will be poured through the decontaminated bailer, collected and returned to the receiving laboratory for analysis. One equipment blank will be prepared at random for each Analytical Batch or at minimum one per twenty (20) samples.

FIELD BLANKS -- Background contamination due to sample collection and processing will be estimated with field blanks. Sample containers will be transported to selected sites, filled with distilled water and returned to the laboratory for analysis in a manner identical to the handling procedures used for other samples. A minimum of one field blank will be included with each Analytical Batch or for each twenty (20) samples collected.

DUPLICATE SAMPLES -- Precision of the total measurement system will be estimated with duplicates. A duplicate sample will be analyzed with every Analytical Batch or once in twenty (20) samples, which ever is the greater frequency. Duplicates will be sent to the receiving laboratory as "blind" samples along with the routine samples.

## 8.0 Sample Containers and Preservation

Samples will be properly prepared for transportation to the receiving laboratory by refrigeration and, where required, chemical preservation. The analytical laboratory will provide all sample containers. The analytical laboratory will also add any necessary chemical preservatives to the containers prior to sealing for shipment to the site. Labels will be firmly attached to the sides of the containers and will contain the following information:

- sample location number,
- facility name,
- analyses requested,
- preservatives added, where applicable,
- date of sampling and time of collection,
- initials of sample collectors.

New sample containers will be used for all ground-water samples collected. At least 5% of the samples per sampling event that require preservation to  $\text{pH} < 2$  will be verified as being correct pH by measuring pH on a small aliquot extracted from the sample bottle.

## 9.0 Sample Handling, Transport and Custody

### 9.1 Sample Packaging

Prior to sample collection, the following information will be legibly and indelibly recorded on the label:

- sample location number,
- facility name,
- sampling date and time,
- analyses requested,
- sample collector's initials,
- preservatives added, where applicable,

*Preserve w/ ice ?*

The label will then be sealed with clear, plastic tape. After the sample is collected, it will be placed in an ice chest for preservation and shipment. Care will be taken to package sample containers so that they will not leak, spill, vaporize, or break. Each shipping container (ice chest) will be labeled with:

- sample collector's name, address, and telephone number,
- laboratory's name, address, and telephone number,
- description of samples,
- number of samples,
- date of shipment.

Properly completed Chain-of-Custody documentation will be prepared and attached to the shipping container. The container will be sealed with packaging tape so that the Chain-of-Custody documentation will be immediately apparent to the receiving laboratory personnel receiving the container but will not be damaged or lost during shipping. The transport of samples to the Analytical Laboratory will be in accordance with Department of Transportation regulations for the shipment of hazardous waste materials.

## 9.2 Chain-of-Custody Documentation

Chain-of-Custody procedures will be followed to establish a written record concerning sample transport from the sampling site to the analytical laboratory. The sampling crew chief will be responsible for the care and custody of the samples collected until they are transferred or dispatched properly.

Each shipping container (ice chest) will have attached a chain-of-custody form completed by the crew chief. After verification by the sample transporter, the chain-of-custody will be sealed in an envelope and attached to the ice chest to be shipped to the receiving laboratory. Upon receipt, the laboratory will complete and duplicate the form. The original chain-of-custody document will then be returned to the party responsible for maintaining the project files.

A copy of a Chain-of-Custody form is provided in Appendix E. The record must contain the following minimum information:

- Collector's sample number
- Signature of collector,
- Date and time of collection,
- Place and address of collection,
- Matrix type,
- Preservatives added,
- Analysis requested,
- Signatures involved in the chain of possession,
- Inclusive dates of possession.

### 9.3 Sample Shipment

Prior to leaving the Thomason site, the sample transporter will inspect the condition of the samples along with the Chain-of-Custody documentation to verify that bottles were correctly labeled and to confirm that samples were being shipped to the correct laboratory(s). The transporter will then sign the Chain-of-Custody form and transport the samples directly to the analytical facility.

### 9.4 Receipt and Logging of Sample

A sample custodian will receive the samples at the laboratory. Upon receipt of the samples, the custodian will be required to inspect the condition of the samples, reconcile the information on the sample label with that on the Chain-of-Custody record, assign a laboratory number, log the sample in the laboratory log book, and store the sample in a secured storage area until assigned for analysis. Results of the inspection will be noted on the Chain-of-Custody record and the laboratory sample log book. Discrepancies between the information on the sample label, on the Chain-of-Custody record, and on the sample analysis request will be resolved before the sample is assigned for analysis.

## 10.0 Laboratory Analysis

Table 10.1 presents a summary of analytes that will be measured and the analytical methods that will be used. All methods are from Test Methods for Evaluating Solid Waste, Second Edition, SW-846 (EPA, 1982) except where noted. Following analysis, the analytical laboratory will dispose of all remaining sample and residues in accordance with State and Federal regulations.

Table 10.1

### PARAMETERS FOR GROUND WATER MONITORING

#### Base/Neutrals/Acid Extractables

Pentachlorophenol	EPA 3550
Acenapthylene	EPA 8040
Napthalene	EPA 8040
Fluoranthene	EPA 8010

Initially, all analytes will be evaluated for each of the monitoring wells. Samples will be collected every two (2) months for the first 12 months of the sampling program and according to the procedures described in the Ground-water Sampling and Analysis Plan (SAP). If, after the 12 month period of sampling is completed, statistical evaluations indicate no evidence of ground-water contamination significantly different from background samples is found, the ground water sampling program will cease. If statistical evaluation indicates the presence of contamination, sampling will continue on a quarterly basis until a ground-water assessment plan is submitted by Thomason and

approved by the U.S. EPA. The ground-water assessment plan will revise and establish a new sampling program to be implemented and carried out through remediation of the contaminated ground water. The revised sampling and analysis procedures developed in the ground-water assessment plan will replace the current ground-water sampling and analysis plan.

#### 11.0 Data Evaluation and Reporting

Data evaluation will conform to regulatory agency requirements. Statistical analyses will be performed upon receipt of all analytical laboratory results. Field blanks, trip blanks, equipment blanks and sample duplicates will be analyzed by the analytical laboratory for quality assurance and quality control (QA/QC). Results of each of these will be evaluated to document the integrity of sampling and analytical procedures.

The analytical laboratory will be requested to report the following:

- sample identification number(s)
- laboratory control numbers(s)
- analytical procedure(s) used for each analyte
- maximum holding time for each analyte
- date and time of analysis for each analyte
- equipment calibration results and date of last calibration (where applicable)
- minimum detection limits for each analyte
- analytical results of analytes for each sample
- date data was reported.



Results of both laboratory data and statistical evaluations will be submitted to EPA within forty-five (45) days of receipt of analytical laboratory results. In addition, an annual report will be submitted to the EPA on or before February 15 each year that this plan is in effect.

APPENDIX    A

Ground-water Sampling Records

THOMASON LUMBER AND TIMBER CO.  
BROKEN BOW, OKLAHOMA  
GROUNDWATER SAMPLING RECORD

MONITORING WELL NO. \_\_\_\_\_  
DATE AND TIME OF SAMPLING: \_\_\_\_\_, 19\_\_\_\_ HOURS  
SAMPLE COLLECTED BY: \_\_\_\_\_ OF B & F ENGINEERING, INC.  
WEATHER: \_\_\_\_\_  
SAMPLING LOCATION \_\_\_\_\_ SAMPLING PERIOD: \_\_\_\_\_ QUARTER 19\_\_\_\_

A. MONITOR WELL CONDITION:

\_\_\_\_ Locked \_\_\_\_ Unlocked  
Well Number (IS - IS NOT) Apparent \_\_\_\_\_  
Steel Casing Condition is: \_\_\_\_\_  
Inner PVC Casing Condition is: \_\_\_\_\_  
Depth Measurement Datum (IS - IS NOT) Apparent \_\_\_\_\_  
Datum for Depth Measurements: \_\_\_\_\_ High point on top of PVC casing; \_\_\_\_ Other \_\_\_\_\_  
Total Depth of Well: Actual \_\_\_\_\_ (ft.): Installed \_\_\_\_\_ (ft)  
\_\_\_\_ Deficiencies Corrected by Sample Collector  
\_\_\_\_ Repairs Required (Describe): \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

B. WELL EVACUATION:

1. Water Depth \_\_\_\_\_ Ft. below datum  
Measured With: \_\_\_\_ Water Level Indicator  
\_\_\_\_ Other (Describe: \_\_\_\_\_)
2. Purge Method  
\_\_\_\_ Pump, (Type: \_\_\_\_\_)  
\_\_\_\_ Bailer (Size: \_\_\_\_\_)
3. Volume Removed: (Refer to Bailing Tables)  
\_\_\_\_ Full Bailers: Required \_\_\_\_\_ Actual \_\_\_\_\_  
\_\_\_\_ Well Purged Dry  
\_\_\_\_ Gallons, if pumped
4. \_\_\_\_ Condition of Water during Evacuation  
\_\_\_\_ Oil Droplets \_\_\_\_ Suspended Sediment  
\_\_\_\_ Oil Phases \_\_\_\_ Clear  
\_\_\_\_ Muddy \_\_\_\_ Chemical Odor  
\_\_\_\_ Other \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_
5. \_\_\_\_ All equipment decontaminated in accordance with current sampling and analysis plan.

C. SAMPLE EXTRACTION:

1. Type Sample: \_\_\_\_\_ Grab \_\_\_\_\_ Composite

2. Method of Extraction: Teflon Bailer

3. Condition of Water During Extraction

\_\_\_\_\_ Oil Droplets \_\_\_\_\_ Suspended Sediment  
 \_\_\_\_\_ Oil Phases \_\_\_\_\_ Clear  
 \_\_\_\_\_ Muddy \_\_\_\_\_ Chemical Odor  
 \_\_\_\_\_ Other \_\_\_\_\_

D. ON-SITE MEASUREMENTS

	<u>First Bailer</u>				<u>Last Bailer</u>	
Temperature	_____	_____	_____	_____	_____	_____
pH	_____	_____	_____	_____	_____	_____
Conductivity	_____	_____	_____	_____	_____	_____

E. SAMPLE CONTAINERS

<u>Sample Number</u>	<u>Container</u>	<u>Parameter(s)</u>	<u>Preservation</u>	
			<u>None</u>	<u>Added</u> <u>By Lab</u>
_____	40 ml glass vial	_____	_____	_____
_____	1 liter amber glass	_____	_____	_____
_____	1 gal amber glass	_____	_____	_____
_____	250 ml plastic	_____	_____	_____
_____	250 ml plastic	_____	_____	_____
_____	1/2 gal plastic	_____	_____	_____
_____	Other (Describe)	_____	_____	_____

F. ON-SITE SAMPLE FILTRATION

\_\_\_\_\_ None: \_\_\_\_\_ On-Site (Describe Method & Containers) \_\_\_\_\_

G. CONTAINER HANDLING:

\_\_\_\_\_ Container Sides Labeled ✓  
 \_\_\_\_\_ Containers Placed in Ice Chest  
 \_\_\_\_\_ Chain-of-Custody documentation completed.

H. \_\_\_\_\_ All Equipment Decontaminated in accordance with current sampling and analysis plan.

I. OTHER COMMENTS: \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_

J. SAMPLER'S SIGNATURE \_\_\_\_\_ DATE: \_\_\_\_\_  
 Monitor Well No. \_\_\_\_\_

APPENDIX B

Water-level / Total Depth Records

[illegible]

**APPENDIX C**

**Instrument Calibration Records**

ENGINEERING, INC.

928 AIRPORT ROAD, HOT SPRINGS, ARKANSAS 71913  
(501) 767-2366

# pH METER CALIBRATION RECORD

[illegible]



ENGINEERING, INC.

928 AIRPORT ROAD, HOT SPRINGS, ARKANSAS 71913  
(501) 767-2366

# CONDUCTIVITY CALIBRATION

[illegible]

APPENDIX D

Equipment Decontamination Records

[illegible]

**APPENDIX E**

**Chain - of - Custody Records**



APPENDIX F

Equipment and Supplies Checklist

## EQUIPMENT AND SUPPLIES CHECK LIST

"Ground-water Sampling Record" Forms

Chain-of-Custody Forms

Envelopes with Lab Mailing Address

Tyvek Clothing

Respirators

Gloves

Bailers

Ice Chests

Ice

Sample Containers

Bailer Cord

Drop Sheets

Garbage Bags

Duct Tape

Sharpies

Clear Plastic Tape